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Original Communications.

THE INDICATIONS FOR COLOTOMY.

By Charles B. Kelsey, M.D.*

GENTLEMEN:—It is sometimes easier to do a colotomy than to decide whether or not it should be done. You see it performed here for many different varieties of disease of the rectum, in some of which it is perfectly evident that it must be done, while in others you might be tempted to delay its performance much longer than I should do. For this reason I so often impress upon this class the indications for the operation, and always before operating pass in review all other known methods of giving relief. Taking these two cases as a text, let us do so once more.

We have here a young man of 32 years, in fair, general condition. His history, in brief, is that he has had disease of the rectum for a couple of years, with constantly-increasing difficulty in having a passage, and that for the last week he has been unable to have any passage at all. The finger in the rectum shows the bowel to be filled up by a cancerous mass just within the sphincters. The mass is as large as your fist and immovable; there is no glandular involvement, and the abdomen is

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not disturbed. The colon is full of hard scybala, showing prolonged obstruction. Now, what shall we do? Shall we try and extirpate? No. Because the growth is not confined to the rectum, but involves all the surrounding tissues; cannot be extirpated completely without fearful risk to life, and would certainly return within a few weeks. Shall we try and open a passage through the mass? No. We might cut through it with a knife, burn through with the cautery, break through with the fingers, or, by a combination of all three, reach the gut above the disease. This, to my mind, would be very primitive and unscientific surgery, attended by great risk, and, if successful in opening up a passage, would do so for a very short time. You will never see in this clinic but two ways of dealing with a cancer. One is to remove it completely, the other is to let it entirely alone.

We are then forced to a colotomy, and in this case, for one of the plainest of reasons, to prevent death from intestinal obstruction, for, unless we relieve this patient's colon very soon, his time is short. There is no new doctrine in this. The principles which guide us to this conclusion are admitted the world over, and call for no discussion. Any gentleman here who stood by and let this man die a horrible death without doing this operation would be almost criminally incompetent.

But now let me show you another case where there is still room in the minds of many for much discussion, and which calls, nevertheless, for a colotomy as plainly as does the one just considered, but for different reasons.

Here is another young man of about the same age and apparent general condition. He has had trouble with his rectum ever since an attack of dysentery, five years ago. All this time he has been under medical treatment, and some of it by good and competent men. When he began he was a strong, healthy, young mechanic. Now he is prematurely old, unable to earn his living, has spent all his own and his father's money, and is steadily growing worse. From one hundred and sixty pounds he has been down to about a hundred, but is now up a little from the lowest point. He tells me he suffers little pain, but he spends many hours of each day and night at stool. Sometimes he passes only a little blood and half a cupful of slime, but when any solid fæces are passed it is only after prolonged effort. He is worn out and discouraged, and has come half-way across the continent, anxious to have a colotomy, which has been fully explained to him by his physician at home.

Shall we do it?

On examination, we find dysenteric stricture at three and a half inches, and below this a complete destruction of the rectal wall by deep ulceration, covering many square inches. There is no obstruction; there is very slight danger of any in the future. If there were, the stricture could easily be divided with the knife and kept open by dilatation. We shall not operate, therefore, because of any fear of fatal obstruction, nor on account of any acute pain, nor because of the stricture, but we shall operate because of the accompanying ulceration. The stricture alone, or a moderate amount of ulceration, we could handle by simpler means; but this degree of ulceration is curable in only one way,—colotomy. Is the price too high? Are we to send out after this operation a poor unfortunate victim of surgery, who will have a constant discharge of fæces from a wound in his groin, and who will be an object of disgust to his friends and loathing to himself? This is the popular idea, and yet I have told the patient that in a few weeks he will weigh twenty pounds more than now; that he will by that time be able to work at his trade; that he will have one solid fæcal evacuation daily from the artificial anus, and no annoyance from it at any time; and that the discharge from the rectum will grow less from the day of the operation, and gradually cease entirely; and all this with a very trivial risk from the operation. Those of you who have followed the results of this operation here know whether or not this prognosis is exaggerated, and you know it in the best possible way by questioning the patients upon whom I operated months ago. You have yet to find the first who regrets having had the operation performed, and better evidence than this in favor of our practice it is impossible to give you.

When, then, shall we do a colotomy?

1. In all cases of cancer which cannot be completely extirpated, where the disease is liable to produce any degree of obstruction, or is broken down and discharging into the rectum. It is possible to have cancer near the rectum which will cause no symptoms referable to the rectum, and hence furnish no indications for operation.

2. In all cases of incurable non-malignant ulceration where the disease is too extensive to admit of complete resection of the ulcer.

3. In all cases of threatened obstruction where the obstruction cannot be permanently overcome by attacking it directly; for example, the obstruction due to old pelvic cellulitis in women.

4. In all cases of recto-vesical fistula.

5. In cases of congenital malformation where the rectal *cul de-sac* cannot be dissected out and brought down to the surface.

Noticing these indications carefully, you will see that colotomy is always advised with the one condition, where nothing else can be done,—cancers that cannot be removed, extensive ulceration that can be cured in no other way, threatened obstruction from any cause which cannot be relieved by attacking it directly, congenital malformations where a useful anus cannot be made in the perineum. In only one class of cases is there no proviso,—the recto-vesical fistulæ. In other words, we do not rashly recommend this procedure to the exclusion of other things; and if we do it more frequently than others, it is because we know how much relief it will give, and are anxious to afford that relief at the earliest possible moment. If colotomy will put thirty pounds of flesh on a cancerous patient, and cause such an amount of relief to his local symptoms as to make him believe himself entirely cured; if by removing the chief cause of local irritation it will tend to retard the inevitable increase in growth; and if the artificial anus is not a cause of mental or physical annoyance, why delay giving the patient the advantage of it at once? and why put off an operation, with less than one per cent. mortality, until in the midst of intestinal obstruction the mortality becomes thirty three or fifty per cent.?

One of the greatest advances in the surgery of the rectum, of late years, is the doing away with the idea that intestinal obstruction is the only indication for colotomy. It is, in fact, only one of many indications for this operation.

ON THE USE OF TEUCRIUM SCORDIUM IN PRURITUS ANI.

By John H. Brinton, M.D.*

PRURITUS ANI, that annoying, irritable itching which occurs around the margin of the anus, may be referred to several causes. It may depend on certain cutaneous affections, such as erythema, eczema, or herpes, and it may be caused by the presence of parasites,—the pediculi, and oxyuris vermicularis. It very frequently accompanies constipation, brought about by disorders of the large and small intestine, and it is especially apt to be present when impairment of the functions of the liver and portal congestion exist. These latter conditions are often developed or, at all events, aggravated, by irregular and pernicious habits and by disordered digestion. Excessive smoking and over-indulgence in alcoholic drinks, conjoined with irritation of the sexual organs, are, according to Allingham, Van Buren, Kelsey, and others, active predisposing causes in the development of pruritus ani.

It is precisely in this class of cases that I have so often observed an obstinate and intractable pruritus, absent during the day, but present at night as soon as the patient becomes warm in bed. This itching is often so great as to rouse the sufferer from his sleep, and to lead him, in his awaking moments, to scratch, almost involuntarily, the skin around the anus in his effort to relieve the unbearable irritation.

In some of these cases, examination of the anal region reveals venous congestion and incipient piles, with more or less excoriation, and perhaps hardening of the skin. In other cases scarcely any lesion can be detected, yet the tormenting itching is present, which, at times, and especially at night, often becomes uncontrollable, and renders the patient miserable.

Some twenty-five years ago Dr. André Lebel published in Paris a monograph on hemorrhoids, which passed through numerous editions, and in which he strongly advocated the employment of teucrium scordium in the treatment of the early stages of the affection. This author stated that in those hemorrhoidal cases, in which the tumors were small, but in which marked pain, irritation, and pruritus existed, much benefit might be obtained from the internal use of the drug. To use his own words: "The cure is perfect. Do you doubt? Try it. Three or four days, at most, of treatment, will assure you as to its value. This treatment is simple, natural, harmless. Try it. You risk, at most, only the loss of three or four days." The form of exhibition was that of pills made from the powder and from the extract of the teucrium scordium. He also advised the external application of an ointment of this extract. In-

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fluenced by these representations, I have repeatedly employed this agent in the treatment of early hemorrhoids, accompanied by pruritus, occurring especially in young persons, and I am sure that I have found marked advantage from its use in cases when the usual treatment by lotions, ointments, and general measures has proved unsatisfactory.

This drug, teucrium scordium, is not a modern one, for its virtues as an anthelmintic were known as long ago as the time of Hoffman. The preparation I have made use of is the powdered leaf of the wild germandra, a plant of Southern Europe, the *Teucrium scordium*. The dose of the powder is 10 or 12 grains, suspended in water, taken three times a day, about half an hour before meals. The powder looks and tastes like a form of pepper, is an active stomachic, and stimulates the appetite. The effect of this drug, internally administered, I have found to be fairly satisfactory. In the cases referred to I have usually observed great relief to follow the exhibition for a week or ten days. At the expiration of this period the anal irritability and itching gradually decrease, and eventually disappear. With the alleviation of symptoms, the obnoxious habit of scratching is broken, and the patient ceases to be disturbed in his sleep. In more advanced cases of hemorrhoids, after the tumors have been fairly developed, I have not found that the drug exerts much influence. Its soothing and curative effect seems to be confined to the initial period of the disease and to the disturbed neurotic condition. How the remedy acts, I cannot tell. It would seem to be somewhat after the manner of Ward's paste, a rectal nostrum, probably of some pepper, famous in its day, and which has been spoken of, at some length, by Sir Benjamin Brodie, in his Clinical Lectures, and since by several rectal specialists. The confectio piperis (U. S. P.) was designed as a substitute for this paste, which is stated, in the U. S. Dispensatory, "to have acquired some reputation in Great Britain as a remedy in piles and ulcers of the rectum."

From an experience of some years, I believe that in the anal pruritus of the young, dependent upon the causes mentioned, the teucrium scordium will be found of benefit. It is not, however, a specific for hemorrhoids, as has been claimed, nor does it, I think, influence the pruritus of any region except that of the anus. In pruritus vulvæ it is, I am sure, absolutely inert.

NOTES ON THE OUTBREAK OF INFLUENZA, AND ITS TREATMENT, DURING THE FALL AND EARLY WINTER OF 1891.

By Roland G. Curtin, M.D., and Edward W. Watson, M.D.

IN the article by the writers, read last September before the Climatological Association in Washington, the present outbreak of influenza was prophesied from a study of the Australian epidemics, ranging between the years 1885 and 1890. The object of this brief article is to supplement the papers already written on this subject. The epidemic outbreak of this fall presents some points of divergence from those of the two previous winters, though agreeing with them in having timed its outbreak at a period when—as alluded to in the paper above mentioned—a general intermingling of the populace takes place, due to the almost universal shopping and other opportunities for disseminating the disease which precede the holiday season.

A renewal of the epidemic in its explosive form occurred about December 1, although cases were met with through the summer and fall in steadily increasing numbers. Cerebrospinal symptoms seemed to predominate, and the disease was less frank in its onset; in fact, three cases of true spotted fever were known to have occurred in Philadelphia. Continued catarrhal fevers occurred, though not so marked or protracted as in the year preceding the outbreak of 1889.

Occipital headache and cervical headache were almost constant symptoms. When serious meningeal symptoms were present, they often immediately subsided with the occurrence of catarrhal diarrhœa, bronchial asthma, or more serious pulmonary disease. A number of cases of meningitis in children were observed which had followed directly on very slight blows on the head, two of them proving fatal.

With the first of December cases increased rapidly in number, and took on a more frank type, resembling the outbreak of the fall of 1889, but in a lighter form, except in those after middle life, and in cases of relapse. The disease travelled over pretty much the same ground, as remarked by a rural practitioner; chills, amounting in some cases to rigors, at the onset, were more marked than in 1889.

A condition of chilliness, with a disposition to perspiration, often exists for days or weeks

before the real outbreak, which is generally directly induced in these cases by severe exposure or exposure coupled with exhaustion. Sometimes chills and consecutive fever assumed an intermittent or remittent type. The fever generally has taken a lower range than in the preceding winters, rarely going above 102° F., while before it was often 103.5° to 104.5° F.

A true conjunctivitis has often occurred, and readily subsided without treatment. Coryza is not so marked as in 1889. Sore throat is almost universal, the only visible signs of which is a redness back of the anterior half-arches and an enlargement of the tonsils and cervical glands.

Croupal laryngitis has been very common where the air-passages were affected, in children resembling sometimes spasmodic laryngitis, with a shrill laryngeal cough, and more rarely with a muffled cough, suggestive of œdematous laryngitis.

In the lungs, bronchitis is the principal symptom, varying but little from that of the preceding year, except in its lighter type. Hemorrhages, both from the nose and bronchial tubes, is more common, and has generally foretold a speedy subsidence of the pulmonary symptoms. Croupous pneumonia has been exceedingly rare. The explanation of this may be found in the general catarrhal condition of the air-vesicles, which excites free secretion, thus preventing solidification.

The catarrhal pneumonia which followed the peculiar conditions alluded to in our earlier articles, was frequent, but by no means so severe as in the first winter, old people very frequently recovering. Almost all the cases of pneumonia were in patients beyond middle life.

The marked redness of the eyes in the common so-called "grip cold," with general muscular and cutaneous soreness, has been followed, after some days, by the onset of rigors and fever. With these symptoms there has been a sense of oppression over the chest, and great pain in the head, occipital or, rarely, frontal, and in the limbs. The duration of the initial fever seemed longer than in similar mild cases in 1889.

The abdominal forms furnished a large number of cases. Diarrhœa is a frequent symptom, and a violent serous diarrhœa generally portends an early and rapid recovery, even where serious symptoms exist. The other abdominal cases of this year consist chiefly of a short period of pain or nausea, followed by some prostration, or a reversion to bronchitis. Infants and young children suffered this fall much more frequently than before, but with mild attacks followed by rapid recoveries.

Treatment.—For the first time since 1889, a recurrence to old therapeutic measures has been of service. The fever mixtures of antiquity seem at least to allay fever, induce quiet and sleep, produce perspiration, and hasten recovery. The standard saline and other fever mixtures seemed to be again efficacious.

For the initial symptoms, salicin still seems to be the best and safest remedy, both as a tonic and an antipyretic, in doses of from 10 to 30 grains. Each dose will often be followed by marked relief, and the occurrence of perspiration, with a fall in temperature. No remedy seems to show the same direct results, unless it be antipyrin or phenacetin, which are decidedly more unsafe, though not so unsafe as in the preceding years, since the tendency to dangerous heart-failure seems now much more rare. Salicin may be combined with small doses of phenacetin, antipyrin, or sodium salicylate.

The formula most agreeable is,—

℞ Salicin, ʒiii;
Sodii salicyl., ʒss; vel Phenacetin, gr. xvi;
Syrup. acaciæ, fʒvii;
Aquæ, fʒix;
Olei gaultheriæ, gtt. xv.
Sig.—Teaspoonful every hour or two. M.

For the delirium and insomnia, sulphonal is the best and most efficacious soporific.

Ammonium iodide, in 2-grain doses every hour, until iodism is produced, hastens recovery in the later stages of pulmonary catarrh and asthma.

Ammonium chloride has proved more useful this year than heretofore.

Nausea is best controlled by cocaine, in doses of $\frac{1}{12}$ grain every two hours in solution. In severe cases feeding by the stomach must be withdrawn and rectal feeding employed, champagne and plain soda-water from the siphon being given to quiet the stomach and allay thirst.

Catarrhal jaundice has been frequently observed, generally in children, and treated by small doses of calomel and sodium phosphate, with speedy recovery.

In any case with *bilious* vomiting, 2 grains of bicarbonate of sodium and $\frac{1}{8}$ grain of calomel may be employed until some action of the bowels has been produced.

CATGUT IN GYNÆCOLOGICAL OPERATIONS.

By William Goodell, M.D.*

THE objections urged by surgeons against the use of catgut are: the difficulty of sterilizing dead animal tissue, the liability of its knot to untie, and its short life. These traditional fears regarding its use I have shared in common with the great majority of English-speaking surgeons. But very recent experience has proved to me that they are in a great measure groundless, and that we have in catgut a most valuable surgical agent,—one which cannot be replaced by anything else.

To avoid ventral hernia after abdominal section, which occurs especially in fat women, I had always been careful to close up the wound by numerous sutures, averaging four to the inch, and to make each one include a liberal amount of tissue. Yet, in spite of this care, ruptures would, to my great mortification, occur in my practice. At last my attention was most emphatically directed to this matter, and my sympathy warmly interested in it, by the appearance of one of my earlier ovariotomy patients with a very large and partly irreducible hernia at the site of the incision. Being a hard-working woman, she was disabled by this infirmity, and was clamorous for relief. But she was so fat, the hernia so large, and the intestinal and omental adhesions so formidable, that I shrank from subjecting her to the risks of a radical operation. In another of my cases, one of oöphorectomy, with a very short incision, but also in a fat woman, two operations of unusual severity and of danger were needed to accomplish the cure of a large and troublesome hernia.

These misadventures led me to use a second row of sutures parallel and supplementary to the deep silk ones ordinarily employed. This row unites the cut edges of the fascia enveloping the two recti muscles,—the linea alba,—and being a buried and a continuous suture, must of necessity be of catgut. In fat abdominal walls, as a further precaution, a second tier of gut sutures are inserted higher, to unite a layer of tissue nearer to the skin. For the last two years I have in this manner closed up the wounds of all my abdominal sections, and thus far, to my knowledge, have not had a single case of hernia.

In rents of the bowel and of the bladder, which are sometimes unavoidable in abdominal surgery, I have resorted also to the use of fine catgut sutures. Serous surfaces unite with remarkable celerity, and I have yet found no good reason for returning to silk sutures in these trying cases. One advantage here of catgut over silk is that, should the needle be inadvertently passed through all the coats of the intestine, the swelling up of the gut sutures effectually corks the needle-holes and prevents fæcal leakage.

In such operations as most of the plastic work in the vagina, the radical cure of hernia and of anal fistula, the removal of the coccyx, the extirpation of the vulvo-vaginal glands, or of labial cysts and tumors, and the amputation of the hypertrophied and prolapsed cervix uteri, catgut sutures will be found to answer admirably. The ability of uniting, by an absorbable and buried suture, layer after layer of a deep wound, in such a loose and vascular tissue as that of the labia, takes away the dangers of hemorrhage, of abscess, and of sloughing. These advantages I have repeatedly verified. But in plastic surgery mere surface sutures of catgut—viz., a single row of them—cannot be depended on, as they are too short-lived for firm repair. Hence I have never ventured to use them in vesico-vaginal and recto-vaginal fistulæ, or in lacerations of the cervix. In this last operation—trachelorrhaphy—I have often been tempted to employ them, especially when a torn perineum was operated on at the same sitting, for then the cervical sutures cannot be safely removed until three weeks have elapsed. But my courage has always failed me, through the fear that catgut would not last long enough for complete union. Surgeons who have tried it in this operation are not at one in regard to its utility, and I have known of very bad results following its use. Neither should catgut sutures be employed in *complete* lacerations of the perineum, unless reinforced by deep sutures of silver wire or of silk-worm gut. Applied then in successive tiers, one above the other, beginning at the vaginal end of the denudation, they bring the tissues in accurate apposition, and are, therefore, used by many European surgeons. I myself, however, do not resort to them in these *complete* tears, because my success has been unqualified by a modification of Tait's operation. In this modification the rectal rent is sewed up first by interrupted

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sutures of silk-worm gut knotted in the rectum. This converts the perineum from a complete tear to an incomplete one. Then the perineal flaps are united also by silk-worm gut in the manner indicated by Tait for an *incomplete* tear of the perineum. This method restores the integrity of the sphincter, which is the great end of the operation, but which often lacks in the original Tait operation; at least it has done so in my hands.

Although for the past two years, freely using catgut as a suture, I have never ventured to employ it as a ligature on any of the larger blood-vessels. A belief in its untrustworthiness had been handed down to me as a professional heirloom, and a man at my time of life usually does not change his opinions hastily. But during the last summer I spent very profitably a month of my vacation in Berlin. There I saw Drs. Martin, Mackenrodt, and Winter, in their abdominal work, fearlessly using catgut to tie the pedicles of ovarian tumors, and to ligate in sections the broad ligaments in both vaginal and abdominal hysterectomy. This was a revelation to me. The advantages of such a ligature—strong, elastic, and absorbable—at once struck me, and on my return home I hastened to put it into practice.

In spite of the greatest care and cleanliness, a silk ligature, however sterilized, is liable to become infected, and consequently to behave as a foreign body by refusing to become absorbed or to be encapsulated. This especially happens in operations for the removal of pus-tubes or in other septic cases, or in those in which a drainage-tube has been used. As a result, an abscess occurs, or, what is more frequent, a sinus leading to the knot appears somewhere in the line of the incision, and stubbornly refuses to close, unless the knot is cut out, washed out, or hooked out, or it is naturally expelled. Every surgeon who is making abdominal sections meets with these ligature abscesses and sinuses, which are a source of annoyance and suffering to the patient and of vexation to the physician. Besides, by interfering with the solid union of the wound, they are a common cause of hernia. Recognizing these evils, a surgeon has recently suggested, in such an unclean operation as the ligation of a purulent or a gangrenous appendix vermiformis, a return to the old surgical procedure of cutting off only one free end of the silk ligature and of leaving the other to hang out of the wound. Of these fistulous tracks I have had my full share, and very generally have had the good luck to get the ligature away; but not always without a resulting hernia.

For instance, one of my patients, living over one thousand miles away, on whom I had performed oöphorectomy, came back to me six months later with an unhealed sinus in the track of the abdominal incision. She had, at my instance, tried in vain injections of hydrogen peroxide, mercuric solutions, and various sterilizing and astringent remedies. After many trials I fortunately was able to fish out the silk ligature with a long slender wire bent at one extremity into a fine hook. This I have had to do on several occasions with other patients who had like sinuses. In another case, one of extrauterine fœtation, on which I had operated, the husband, himself a surgeon, removed the silk ligature, which had caused two abscesses and finally a sinus. He did this by a very ingenious contrivance, which I shall describe for the benefit of others. He tied several loops of horse-hair into a bunch, and after inserting them into the sinus, succeeded in entangling the ligature and removing it. A few days ago I assisted a friend in cutting down upon a silk ligature, which several months previously had been thrown by another physician around a pus-tube close to the left cornu of the womb. A drainage-tube having been used, a sinus resulted, which discharged much matter, and through which the lady menstruated. Several times I had evidently caught the ligature with the hook previously referred to, but no prudent force could dislodge it. We found that a double ligature had become partly encapsulated, and was so firmly held that we were forced to cut its two loops before it could be detached. I have not, however, always been so successful. In certainly two cases, if not in more, operated on by me years ago, the silk ligature eluded all my efforts to remove it, and the sinus in each one still remains open, to the great annoyance of my patients.

Now, all trouble of this kind, it seems to me, can be done away with by the use of an absorbable ligature. Hence in all unclean abdominal work, or in those cases of section needing drainage, I should advise the use of catgut, for after fulfilling its briefly-needed duty as a ligature, it becomes absorbed and disappears. What more can we ask of a ligature?

In the use of catgut I do not restrict myself to the foregoing class of cases, for I am now resorting to this admirable ligature more and more in my abdominal work. Having full confidence in the adequacy of its staying

and lasting qualities, I feel assured that it can be used far more freely than silk, because it can never live long enough to behave as a foreign body. In the removal of fibroid tumors of the womb by the operation of supravaginal hysterectomy, I have recently been ligating wholly with catgut the broad ligaments and all the blood-vessels, large and small. Nor has the number of these ligatures ever made me feel anxious. One of my last cases of uterine fibroid, a successful one, in which the tumor weighed about ten pounds and had a very broad base, was treated in this manner. So completely had the vascular supply of the tumor and of the womb been cut off, that when the wire of the clamp in being screwed home broke, not a drop of blood escaped from the uterine stump.

In some small uterine fibroids, and in some large ones which burrow laterally into the broad ligaments, a pedicle cannot be formed. These, therefore, have to be either enucleated or extirpated. In the latter event there can be no better way than that of tying off the uterine attachments by catgut. So impressed with its advantages are some distinguished German surgeons, notably A. Martin, that they are now treating all their cases of fibroid tumor of the womb by extirpation. In tying off these vascular regions, overlapping quilted sutures are used, most of which can afterwards be made extra-peritoneal by sewing the peritoneum of the rectal side of the opening to that of its vesical edge. In tying the large pedicle of an ovarian tumor one should not trust to a single ligature of catgut, as with silk in the Staffordshire knot. But, first, the outer third of the pedicle is tied; then the inner third; and finally, the middle third, each one with a separate ligature. Nos. 3 and 4 of the German gut is sufficiently strong for this purpose.

For cancer of the womb I have with catgut lately performed most successfully three vaginal hysterectomies. In each one, after a circular incision around the cervix, the womb was separated from its vaginal and vesical attachments. The hemorrhage was controlled by a stitching with quilted sutures of the peritoneal edge of the wound to the vaginal. Then the broad ligaments of either side were transfixed and tied off in sections by two blunt aneurismal needles, the one bent to the right, the other to the left. As the womb became more and more freed, it descended lower and lower, until, its highest attachments being secured and severed, it was finally extirpated. Traction being now made on all these ligatures, their knots and, consequently, the tissue strangled by them were drawn down below the level of the vaginal opening, which was then sewed up with catgut sutures. Thus these knots and the tissue included by them were made extraperitoneal, and the subsequent sloughing and foul discharges took place merely in the vagina. In one of these cases, one or two of the more highly placed ligatures could not be drawn below the vaginal wound, so as to be made extraperitoneal. These were, therefore, cut off close to their knot, and, being now without free ends, gave no further trouble. After the opening in the vault of the vagina had been sewed up, the free ends of all the remaining ligatures were cut off also close to their knots.

The use of catgut and the extraperitoneal treatment of the ligatures should, it seems to me, lessen greatly the liability of septic infection. Leopold lost only four cases out of eighty, and Staude one in twenty-two. My cases recovered very promptly, and with far less pain and less constitutional disturbance than in even uncomplicated cases of ovariotomy. They could turn from side to side, and move about in bed with a freedom denied to patients after abdominal section. Further, since the loops of these ligatures were absorbed, the knots dropped off spontaneously. This saved my patients from the annoyance of those repeated speculum examinations and repeated tugs at silk ligatures before they can be released. The remote, or permanent, effects of this operation of vaginal hysterectomy for uterine cancer are marvellously good, greatly surpassing the average permanent success of analogous operations for labial, mammary, rectal, and penile cancers. This is abundantly confirmed by the statistics of individual German operators, and especially by those tabulated from the published records of the Dresden clinic for the diseases of women.

The mode of preparation of catgut which I have adopted is as follows: The unprepared gut comes in greasy coils of a dark amber color. To dissolve out the fat, these are placed in commercial ether for from twenty-four hours to forty-eight, according to the size of the gut; and, if the gut is of the larger sizes, the ether is changed once. The gut is now immersed for forty-eight hours in a 1 : 1000 alcoholic solution of corrosive sublimate. It is then wound on glass spools by surgically clean hands, and kept permanently for use in a mixture of two parts of oil of juniper to one of alcohol, which is occasion-

ally changed. When needed for an operation, I transfer the requisite number of spools to a mixture of one part of glycerin, which has been sterilized by heat, to nine of alcohol. This gives the gut greater smoothness and pliability. Thus prepared, it will last in the tissues of the body from a week to ten days.

THE TREATMENT OF RATTLESNAKE-BITE BY PERMANGANATE OF POTASSIUM, BASED ON NINE SUCCESSFUL CASES.

By Amos W. Barber, M.D.,* Cheyenne.

POISONED wounds, inflicted by the fangs of the rattlesnake, are happily more rare each year, since, as the country is becoming more populated, the crotalus is rapidly being exterminated. Yet, considering the recklessness which characterizes the cow-boy in his treatment of this reptile, it is astonishing that this class of injury is not more common. Thus it is the invariable custom among the cattlemen to dismount and destroy these snakes whenever they are seen. This is readily accomplished, since a slight blow will break the back. This blow is, however, generally delivered by means of the quirt, a whip not over two and a half feet long, and hence a weapon which brings the one who wields it in unpleasant proximity to the fangs of the reptile. A still more dangerous practice, and one which I have frequently seen, is a method of playing with the rattlesnake for the delectation of the cow-boy at the expense of a "tenderfoot." It is well known that unless a snake is coiled, or held by the tail or body, or placed at length in a hole or crevice so narrow that by rendering its length sinuous a certain amount of support is given, it cannot strike. On this theory, a mounted cow-boy first puts a rattler to flight, then pushes his pony in pursuit, stoops from the saddle, seizes it by the tail, gives a quick upward jerk, and, swinging it so rapidly around his head that it is impossible for it to strike, sets off in pursuit of whoever has exhibited most terror at the sight of the reptile. When within fair distance he hurls the snake at the unfortunate victim, in the full assurance that even should it strike him it cannot bury its fangs in his flesh, since it is impossible for it to coil till it reaches the ground. This is a jest of which I have frequently been the victim; nor have I yet learned to appreciate it with unalloyed mirth.

* Governor of Wyoming.

The belief that rattlesnakes always give warning before striking is not well founded. If come upon suddenly, they often strike first, and if disturbed when in a space so narrow that the coil cannot be formed, they may give no warning of their presence beyond the penetration of the fangs into the hand or foot of an intruder. One such case I saw.

It seems to be well established that a snake will not voluntarily crawl over a hair rope, and in certain parts of the country it is common for campers out to surround their beds with such a rope, since the reptiles seek warmth, and are frequently found under or in the blankets of those sleeping on the ground.

After an exceptionally large experience with wounds inflicted by the fangs of the rattlesnake, and an experience which, I am glad to say, has been most successful in its outcome, I think it my duty to add, from a practical stand point, my testimony as to the efficacy of permanganate of potassium in the treatment of this class of cases. This drug was first introduced by Lacerda, of Brazil, and, if more generally used, would, I believe, render comparatively innocuous a class of injury which now usually terminates in death.

I make this statement as to the fatality of crotalus poison advisedly. I know the belief is very common that the poison of a rattlesnake is readily combated by full doses of whiskey; this is fallacious. I have taken the pains to investigate a number of instances of cure resulting from the employment of free stimulation. In each case the fangs did not penetrate deeply into the tissues, but either scratched over the surface or tore through, making a wound of entrance and exit, so that the poison, or at least the major part of it, was not injected into the tissues of the person struck. The effect is very much the same as when an inexperienced practitioner picks up a fold of skin for the purpose of making a hypodermic injection, and plunges his needle entirely through, forcing the medicament wide of his patient.

Nearly all, if not all, of the cases treated by stimulation alone have, according to my experience, perished if they have received a full dose of virus from a vigorous snake. One of these cases lived for upward of a month. He then perished of what might be considered a chronic pyæmia, the symptoms being those of blood-poisoning, accompanied by multiple abscesses. Another case, not occurring in my own practice, died at the end of four days apparently of cardiac failure. Active delirium persisted all through this

case. Two other cases treated by stimulants also died with symptoms of more or less acute blood-poisoning.

The feeling is almost universal among the people of Wyoming that a fair strike from a rattlesnake is certain death, and that the free use of stimulants simply postpones the end. I do not for a moment deny that a strong, lusty man may be struck fairly by a rattlesnake, and if the wound is at once opened and cauterized, and the heart judiciously supported, he may yet recover; still the fact remains that the great majority of these cases perish at a longer or shorter interval following the infliction of the wound. Hence any treatment that will save even the majority of such cases is a distinct gain, and one which has saved every one of nine cases to which it has been applied needs no further commendation.

The first case of rattlesnake wound to which I was called occurred in 1885. A cow-boy was bitten on the foot, the fang penetrating through the boot. He was brought forty miles to Fort Fetterman, where I was then stationed. I saw him about twenty-four hours after he was struck. There was an enormous swelling, extending up to the knee. The whole limb was bronzed in appearance. There was no special discoloration about the wound; in fact, the swelling disguised this to such an extent that it was impossible to determine exactly where the fangs had entered. The pulse was scarcely perceptible at the wrist; the heart was beating with excessive rapidity. The patient was suffering great pain. His mind was clear, but he was oppressed with a dreadful anxiety. Up to the time I saw him he had received absolutely no treatment, excepting the application of a cactus poultice to the leg, since there was no whiskey at the ranch where he was wounded. I at once made free incisions, five or six in number, from one to two inches in depth, and about three inches in length. These cuts gave him very little pain, nor was there much bleeding, though there was an enormous amount of serous oozing. Into these wounds was poured a fifteen per cent. solution of permanganate of potassium, and fully half an hour was devoted to kneading this drug into the tissues. In addition I made many hypodermic injections into all portions of the swollen tissue, but particularly about the wound. Since there was no very distinct line of demarcation between the swollen and healthy tissue, I did not, as in other cases, endeavor to prevent the extension of the cellular involvement by a complete circle of hypodermic injections. I employed, in all, about forty grains of the permanganate. In addition to the local treatment I pushed stimulation, employing carbonate of ammonium and whiskey. By means of diuretics and laxatives the kidneys and bowels were encouraged to eliminate as much of the poison as possible.

The patient went on to uninterrupted recovery. The wound healed with very little sloughing. The patient returned to his work in about a month. The cure of this case was regarded by the cow-boys as most exceptional, since, in their experience, similar cases, even though very freely stimulated, had not recovered.

Some time later I was called to see a girl, aged 14, who was struck by a rattlesnake, fifty-six miles from Fort Fetterman. There was some trouble about procuring relays, and I was compelled to ride the same horse all the way out. This took a little short of five hours. This, together with the time consumed in sending me word, caused an interval of about twenty hours between the infliction of the injury and the time I saw the patient. I found the fangs had entered on either side of the distal joint of the middle metacarpal bone. The arm was enormously swollen, almost to the axilla, and exhibited a bronzed discoloration; this was especially marked about the wound and along the course of the lymphatics. The swollen area was *boggy* to the touch, and exhibited a distinct line of demarcation between the healthy and diseased tissues, excepting along the course of the brachial vessels, where the indurated, discolored area extended as a broad band into the axillary lymphatics, which were distinctly swollen. The patient was delirious, was harassed by terror, complained bitterly of pain, and had an exceedingly feeble, rapid heart-action. There was marked dyspnœa, and all the signs of impending dissolution. I at once made free multiple incisions into all parts of the inflamed tissue, carrying two of my cuts through the wounds made by the fangs of the snake. In the arm these incisions were several inches long and from one to two inches deep. As in the former case, the bleeding was slight, but there was a free exudation of serum. Into these wounds a fifteen per cent. permanganate of potassium solution was poured, and as much as possible was kneaded into the tissues. In addition, multiple hypodermic injections were made, these being carried particularly into the bitten region, and circularly around the arm just at

the border of the line of demarcation, thus endeavoring to limit by a complete circle of the antiseptic solution the further extension of the inflammatory process. In the region of the brachial vessels I hesitated to make my injections as thoroughly as in the rest of the circumference of the arm, fearing lest the permanganate of potassium might injure important vessels or nerves.

This treatment caused very little pain, but immediately after the constitutional symptoms became distinctly aggravated. I stimulated freely, and at once made preparations to bring the patient to the Fort Fetterman Hospital. She was transported over the fifty-six miles, I riding the same horse back again, and arriving at Fort Fetterman the same evening.

The after-treatment of this case was comparatively simple. She was stimulated freely as long as cardiac weakness was manifested. As in the former case, diuretics and laxatives were employed. The arm was wrapped in cloths soaked in a weak permanganate solution, was placed in a splint, and was loosely bandaged. There was some sloughing, but this was treated on general surgical principles. The patient recovered the entire use of her arm, and was turned out cured in about six weeks.

The third case I saw about fourteen hours after he was struck. The patient was a healthy blacksmith, about 30 years of age. The wound was at about the middle of the forearm, the fangs entering towards the ulnar side. When I saw the patient he exhibited comparatively trifling symptoms. His heart-action was rapid, and he was suffering from the typical despondency and terror, but I could not note the profound systemic depression characteristic of the great majority of cases. Surrounding the wound and extending up the forearm for several inches there was a boggy swelling, exhibiting a sharp line of demarcation. It was bronzed in color, and was apparently spreading. I at once applied the intermittent ligature just above the elbow, and injected the permanganate of potassium solution freely all through the involved tissues, particularly in the region of the bite and about the periphery of the swelling, surrounding the latter by a complete ring of injections.

The general treatment of this patient was continued on the same general line as described in the former cases, stimulants being employed moderately. He recovered without any bad symptoms. There was no sloughing; the swelling disappeared without any necrosis of tissue. He is still pursuing his trade in Cheyenne, and suffers from absolutely no disability.

I saw but one case shortly after the wound was inflicted. This patient was a healthy young man, who was struck about the middle of the dorsal surface of the hand, the fangs entering on each side of a metacarpal bone, and the poison lodging apparently in the palm of the hand. The patient, when seen, exhibited the characteristic terror and depression, weak, rapid heart-action, and agonizing local pain. I made two small incisions in the region of the wound upon the dorsum of the hand, and injected permanganate of potassium freely. This patient ultimately recovered, but only after sloughing and prolonged suppuration. I believe that had I incised freely and at once from the palmar surface, I would have been spared this unpleasant complication.

I have had in all nine cases, and without a single death. The others are in their general features and in the treatment employed quite similar to those given.

The symptoms resulting from snake-bite poison are strikingly like those dependent upon the violent septic poison seen in pre-antiseptic times. There is often the same prodromal chill, the high elevation of temperature, the profound effect on the circulation, and the rapid cellular involvement. The tissue disturbance following snake-poisoning differs from ordinary cellulitis, however, in the following particulars: The color is *bronze*, not red; the involved area is *boggy*, not brawny; and the extension of the process is *exceedingly rapid.*

The treatment applicable to one condition seems to be equally successful when applied to the other. In cellulitis, free incisions, antiseptic lotions, and active stimulation are the three means upon which the surgeon mainly depends, and in combating the local and general symptoms excited by snake-bite-poisoning, the same treatment has given me the successful results detailed above. Whether or not permanganate of potassium is more active than other antiseptics in snake-bite-poisoning I am not prepared to state, but the high authority of S. Weir Mitchell, together with my own experience, does not incline me to substitute any other drug at present.

I would formulate the treatment for poison of the rattlesnake as follows:

1. Free incisions to the bottom of the wound and immediate cauterization; or, if

this is not practicable, sucking of the wound.

2. The immediate application of an intermittent tourniquet,—that is, one which is relaxed for a moment at a time,—so that the poison may gain admission into the circulation in small doses.

3. The free administration of alcohol or carbonate of ammonium.

This might be termed the *urgency treatment* of snake-bite-poisoning. The *curative treatment* requires,—

4. Free incisions into all portions of the inflamed tissues, and the thorough kneading into these incisions of a fifteen per cent. solution of permanganate of potassium.

5. Multiple injections of the same solution into all the inflamed regions, but particularly into the region of the wound.

6. The complete surrounding of all the involved tissues, by permanganate of potassium injections placed from half an inch to an inch apart, the needle being driven into the healthy tissue just beyond the line of demarcation, and its point being carried to the deepest part of the border of the indurated area.

7. The permanganate of potassium solution should be used freely in fifteen per cent. solution. I have used one and a half drachms of the pure drug diluted, and would not hesitate to use four times that quantity were it necessary, since it seems to exert no deleterious effect, either locally or generally.

8. The involved area should be dressed by means of lint saturated with fifteen per cent. permanganate of potassium solution. Stimulants should be given according to the indications,—*i.e.*, the condition of the pulse. Laxatives, diuretics, and diaphoretics should be administered to aid in the elimination of the poison. The diet should be as nutritious as the stomach can digest.

THE VALUE OF EARLY AND THOROUGH OPERATIONS IN NEW GROWTHS.

By J. William White, M.D.*

BY the application of modern methods in the diagnosis and treatment of surgical diseases the surgery of to-day has acquired an exactitude in the recognition of pathological conditions, a definiteness in the operative procedures intended for their relief, and a certainty as regards the subsequent progress of the case, which has vastly increased not only its usefulness to humanity but also the pleasure and gratification which come to the surgeon himself from the consciousness of doing good in a much greater variety of diseases and to a much larger number of persons than ever before. In one notable direction, however, but little advance has been made. Malignant disease has not only failed to come within the limits of the curable class of diseases, but is even thought to be steadily upon the increase.

Statistics appear to show that whereas in 1861 there where 360 deaths from cancer among each million persons in England and Wales, in 1887 the proportion had risen to 606 deaths to the million. If the inquiry is limited to persons over twenty-five years of age, we find that the death-rate in England and Wales was 1079 per million in 1877 and 1331 per million in 1887. The mortality from cancer in the city of New York rose from 400 in the million, in 1875, to 530 in the million in 1885. In England alone there are 7000 deaths annually from carcinoma, and there are 30,000 persons suffering from that disease at any one time. According to Dennis,† carcinoma causes nearly half as many deaths in one year in the United States as do accidents and injuries. Billings has shown that 14.000 persons perished from this cause in 1880. This mortality is easily understood when we remember that, among the enormous number of cases of this kind, the vast majority present themselves to the surgeon, or are brought to him by the general practitioner of medicine, in such a condition that operation, while it prolongs life and alleviates suffering, is not followed by permanent cure. On the contrary, return is so common that the curability of true carcinoma is denied by some very respectable authorities,—*i.e.*, the possibility of cure in any case whatever.‡ As to sarcoma, the same remarks apply, although the figures are not so definite, nor is the certainty of return thought to be quite so unmistakable. Taking all neoplasms together, however, sixty-four per cent. are known to be malignant.

Recognizing the gravity of all malignant tumors, and the possibility of malignancy in many that appear to be benign, we may pro-

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† *Transactions of American Surgical Association*, 1891.

‡ See "Excision of the Breast for Cancer," R. M. Hodges, M.D., *Boston Med. and Surg. Journ.*, November 29, 1888.

ceed logically by inquiring whether or not the essential causes of these conditions are such as to favor the theory that early operation may be curative, or whether there are any facts which lend support to that theory. It must be admitted at once that the essential cause of tumors remains unknown. But there are various theories prevalent at the present day, among which, or in some modification of which, the truth will probably be found. The resemblance between cancer and the group of diseases known to depend upon infection by specific microbes is very marked. In all these diseases we have growths which are self-sustaining, undergo special methods of degeneration, have a marked tendency to ulceration, become at some time in their life-history infective either by inoculation of other individuals, or by invasion of neighboring tissues, or are the subjects of metastasis by the transference of portions of the growth to distant parts through the lymph- or blood-channels. Traumatism or persistent irritation is also in all of them a predisposing cause for their development or for their localization. These *a priori* arguments were supported by others from analogy, the tumors which affect some plants, such as the galls, which form around the eggs of insects, having been instanced in support of this theory. A few years ago it was definitely announced, indeed, that the microbe of carcinoma had been discovered. Scheuerlen* stated that he had found in ten cases a characteristic bacillus, which he had succeeded in cultivating, but subsequent researches have failed to confirm this view. Senger† regards this micro-organism as a potato bacillus, and has been able to produce it from the potato sterilized by ordinary methods. Francke‡ found the same microbe in three specimens of sarcoma. Rosenthal§ denied its pathogenic nature and its etiological relation to cancer on account of its inconstant occurrence, of its presence in other tumors and on healthy skin, and because of the negative results of inoculation. Efforts at transplantation of carcinoma have, as a rule, resulted negatively, although Hanau‖ claimed to have succeeded in the case of rats, and Wher¶ in the case of dogs. Last year Russell,** of Edinburgh, described a microbe belonging to the so-called sprouting fungi as the characteristic organism of cancer, and asserted a definite etiological relationship between it and carcinoma. As Senger has said, however, the cancer bacterium, if there be any, must possess powers different from all other known bacteria, as it would have the quality of causing heteroplastic growth; that is to say, it would produce in the tissues among which it is inoculated a collection of cells constituting the tumor, but differing from those which previously existed in that locality. All known pathogenic bacteria giving rise to disease cause local inflammatory disturbances which result in homologous growths; that is to say, in the production of new material, which is essentially a granulation tissue, and contains no cells unlike those of the part in which it develops.

It is evident that we cannot at present accept the microbic theory of cancer as demonstrated, but these researches have served to call attention to the fact that malignant tumors, the cells of which have the property of independent growth and multiplication, are disseminated by the same channels as the microbes which give rise to the infective diseases. The influence which heredity exercises in the development of malignant growths has given rise to the theory that these are always essentially congenital and constitutional, and that, therefore, operations upon them cannot be truly curative, and should only be performed to relieve symptoms. The conclusion is, however, not justified by the premises. It is more than probable that, as in other diseases, it is the predisposition which is inherited, the culture soil, upon which the new cells can take on with advantage the qualities of rapid growth and increase which characterize them, and which it may be supposed are held in check by the normal cells of most healthy individuals. Fink, of Prague, found†† that in 194 cases of cancer of the breast a distinct hereditary predisposition was substantiated in only 8.

An attractive theory (Cohnheim) of the causation of tumors refers them to a primary matrix of embryonal tissue, the cells of which have failed to develop and have remained useless though harmless during the earlier life of the individual. If such a person has inherited a diminished physical activity or

* *Deutsche Med. Wochenschrift*, No. 48, 1887.
† *Berlin. Klin. Wochen.*, March 5, 1889.
‡ *Münch. Med. Wochen.*, 1887.
§ *Centralblatt für Bact. u. Parasit.*, No. 13, Band 3.
‖ *British Medical Journal*, October 19, 1889, and *Berlin. Klin. Wochen.*, 1888.
¶ *Transactions of Congress of German Surgeons*, 1889.

** *British Medical Journal*, December 13, 1890.
†† *Centralblatt für Gynäkologie*, No. 12, 1889.

lessened vitality,—that is a condition, in whatever form of words we may choose to describe it, in which the normal powers of the healthy cells of the body are distinctly lessened,—such a collection of embryonal cells is likely to take on growth and development and to become a tumor of some variety. This may or may not be malignant. It is often impossible even with the aid of the microscope to distinguish between the cells of a sarcoma and those of granulation tissue, and an entirely harmless papilloma often closely resembles an epithelioma of more or less malignant type. It is possible, as has been suggested,* that local conditions of diminished physiological resistance may favor malignancy. Every surgeon is familiar with the frequency with which traumatisms are said to be the starting-point of cancerous growths, which, according to this theory, would thus be due to the fact that, given an embryonal matrix of immature and undeveloped cells in the healthy individual, the surrounding cells afford a sufficient bar to growth and development until their powers of resistance are lessened by injury, giving the cells of the matrix a chance to take on proliferation.† The influence of long-continued local irritation may be conceived to act in the same manner, and we would thus have an explanation of the relationship between smoking and epithelioma of the lower lip, eczema about the nipple and cancer of the breast, fissures, ulcers, or psoriasis of the tongue and cancer of that organ, irritation of the scrotum and "chimney-sweep's cancer," and many similar but otherwise mysterious occurrences. The benign tumors, or those which have no tendency to invade the surrounding parts or to become disseminated, would represent a mere increase in volume of the cells of the original focus or matrix progressing in the direction of least resistance, the adjacent tissue being capable of protecting itself against infection. If now at the same time a lowering of vitality occurs, or the region of the tumor is exposed to a traumatism or to the influence of long continued irritation, changes take place in the tissues about the periphery of the tumor which diminish their powers of resistance and make it possible for the new cells to infiltrate them. The growth becomes fixed, the skin involved, the life of demarcation which formerly existed between the tumor and the surrounding tissues becomes less definite; in other words, a benign growth has been transformed into one which has all the properties of malignancy. There is positively no evidence whatever that in this process the adjacent tissues take any active part, the growth extending not by means of their aid, but in spite of them. Another argument which may be adduced in favor of this theory is the circumstance that carcinomata so frequently develop in organs which are undergoing retrograde metamorphosis. Of 5000 tumors of all sorts occurring in women, 3500 were carcinomata affecting the breast and uterus.‡ and of these a considerable proportion developed at or after the climacteric, or at a time when the physiological resistance of the tissues is lessened. It may be mentioned, too, that these organs are peculiarly rich in lowly-organized cells which are thought still to retain many of their embryonic potentialities.

We thus see that, from the theoretical standpoint, to whatever cause we assign the production of malignant growths, there is a period in which it is conceivable that they should be thoroughly and completely eliminated. If they are microbic in origin, the spot of original inoculation might be removed could we become aware of its existence at a sufficiently early period. If they depend upon the development of such a matrix as has been described, its removal, if thorough and complete, would likewise be followed by the permanent disappearance of the growth and, so far as that locality is concerned, of all tendency to growth. As to the theories themselves, we must hold ourselves open to conviction by further investigation and experiment. The practical deduction to be drawn from these or from any other possible theory of cancer, which is in accord with modern pathology, is perfectly evident,—*Cancer is at some stage in its development a purely local disease.*

Early operation is therefore indicated with the greatest force and certainty. Thorough operation—that is, removal not only of the growth, but of all the tissues in immediate relation with it—is of equal importance.

If a benign tumor may be transformed into a malignant one; if, as we have seen, it is impossible even after a microscopic examination to distinguish some forms of malignant growths from others comparatively harmless; and if sixty four per cent. of all neoplasms are malignant, it is evident that

* Senn, "Biology of Tumors."

† See Barwell on "Acute Traumatic Malignancy," *British Medical Journal*, February 11, 1882.

‡ W. R. Williams, *The Annals of Surgery*, October, 1891.

every growth should be looked upon with grave suspicion by the medical man under whose observation it first comes, and that operative measures should be resorted to whenever there is the least doubt as to the character of the tumor, a doubt which must of necessity exist in the large proportion of cases. It is not my purpose in this paper to enter into a description of the differential diagnosis between benign and malignant growths, but rather to emphasize the fact that while in many cases such diagnosis can be made with a considerable degree of certainty in a very large proportion in which this is not possible, the doubt should be considered to indicate operation, and immediate operation.

Statistics strongly support this position. For example, given a tumor in the breast of a woman of any age, and the chances are in round figures four to one that it is malignant and three and sixteen-hundredths to one that it is cancerous. Taking both sexes together, if the tumor involve the tongue or mouth, the chances are eight to one that it is malignant; if the rectum, three and one-half to one in favor of carcinoma; and if the patient be a male adult, the chances are thirty-two to one in favor of carcinoma if the tumor is on the lip, and twenty-nine to one if the disease involve the tongue. These startling figures are in themselves strong evidence of the attitude which should be occupied by medical men to whose attention a tumor is brought for the first time; but, as a matter of fact, we do not find that their importance is fully appreciated. Certainly neither the theories nor the figures which we have mentioned seem to influence the majority of practitioners to the extent that they should in favor of early operation, and of course they are unknown to the patients themselves. A woman with a recently-discovered tumor in her breast is loath to believe that it can be of a cancerous nature, and her medical attendant, often from very kindness of heart, is almost equally averse to making that diagnosis. Palliative treatment is therefore tried, resolvent ointments are employed, tonics are administered, and a period of time is allowed to elapse, during which the microbe, if there be one, is finding its way through lymphatics or veins into the neighboring tissues, or portions of the growth by auto-inoculation are being carried through the same channels first to neighboring and then to distant parts, there to continue their destructive proliferation.

The belief of both medical men and their patients in the incurability of cancer also operates strongly to discourage early operation. Better results would soon bring about a change in this respect.*

Are there any reasons why we should not operate upon the first discovery of suspicious growths? Let us take the case of a tumor of the female breast, for example. No operation can be said to be without risk, but as a matter of fact, when properly performed, removal of the breast, even including the complete cleaning out of the axillary glands up to the level of the first rib, which should always constitute a part of the operation, is not at the present day attended with much danger. Personally, after an experience with these cases, which, thanks to my association with Professor D. Hayes Agnew, has been exceptionally rich, and which extends over a number of years and includes many hundreds of these operations, I have never seen a case of removal of the breast die. I am slowly getting together our statistics, but unfortunately many of the microscopical data of the earlier cases are wanting, and the diagnosis must rest on the clinical history and the gross appearances of the tumor. At any rate, so far as the operation went, they all got well, and have done so without one single exception for at least ten years and in a series of about four hundred cases. In the great majority of such cases all surgeons now expect to get union by first intention, and to have the patient out of bed in from ten days to two weeks.

The operation is not followed by pain or by the development of fever, often by not the least discomfort. It is apparent, therefore, that it is not to be treated as a very grave or dangerous procedure, and that it should not be so regarded by either patients or their medical advisers. The most recent statistics are those of Dennis, whose mortality in a series of seventy-one cases was only one and four-tenths per cent. Like him, I do not understand the mortality varying from seven to twenty-three per cent., reported by various surgeons, but suppose the records on which their percentages are based must extend back into preantiseptic periods. Fink (*op. cit.*), in his series of 194 cases of carcinoma mammæ, treated in Gussenbauer's wards from 1878 to 1886, found a mortality of only three and one-third per cent. in the 153 who underwent excision of the breast and axillary glands, and these patients (mostly advanced cases)

* Jacobson, "The Operations of Surgery."

lived on an average seven months longer than those whose breasts were not removed. The mutilation—that is, the deformity which follows the removal of the entire breast—is, of course, a valid objection to the operation, and would of itself prevent a too sweeping recommendation in favor of operating. There are certain cases, especially in young females, in which it is quite proper to delay, or to remove simply the growth itself, with some portion of surrounding tissue, sparing the remainder of the gland until at least a careful microscopical observation can be made. Preliminary removal of portions of such growths for examination by the pathologist has not been found satisfactory, as they do not furnish sufficiently complete sections to justify the positive opinion which is required. Given, however, a woman who has reached or passed middle age, and who has developed a breast tumor, not associated with nursing or lactation, and the chances that it is malignant are at least nine or ten to one, and very probably much greater. This fact alone should influence both patients and physicians in favor of early operation in all such cases. I have given elsewhere with some fulness my reasons for advocating operation in this particular class of cases.*

Taking another class of cases as an example, we may consider what has been called the precancerous conditions of the tongue. Butlin has shown that in seventy per cent. of a certain number of cases of cancer of the tongue which had been under his care, a condition of so-called leucoma or of warty growth had immediately preceded the development of the carcinoma. In epithelioma of the lower lip the same condition of warty growth is observed as a precedent stage, with even greater frequency. In this latter instance we have one of the most satisfactory examples of the effect of early operation upon carcinoma. Instead of the almost invariable recurrence with which we meet in the usually late operations upon the breast or uterus or rectum, we find that the statistics collected from a large number of cases show a cure in no less than thirty-eight per cent. It must be understood that the figures on which this percentage is based were made up of operations upon cancers of the lower lip at all stages of their development. The proportion of cures among cases operated on in the precancerous stage would, of course, be immensely increased. The circumstances which bring about this marked difference in results between this form of cancer and others are probably the fact that the growth in its very earliest development can scarcely fail to be noticed; that it almost immediately becomes either a deformity or a source of annoyance to the patient; that the operation for its removal is one which can be performed in a few minutes, or even in a fraction of a minute; that there is almost no mortality following it, and often no appreciable deformity or interference with function. These facts have all led medical men to advise patients to submit to operation at a much earlier period than in any other form of carcinoma. Dennis thinks (*op. cit.*) that epithelioma derived from the epithelium of surfaces, like the skin and mucous membrane, is less likely to recur than when it takes its origin in the epithelium of glands. His own cases seemed to show that the more embryonic the cells of the removed growth the greater the liability to recurrence; and this is what we might expect on *a priori* grounds. Whatever the explanation, it would undoubtedly be of inestimable advantage if every variety of cancer could be seen at the same stage and operated upon with the same promptitude as is customary in epitheliomata of the lower lip. Other illustrations could be employed, but if it is apparent that there are reasonable grounds for the advocacy of early operation in *any* carcinoma the same line of reasoning applies to all carcinomata, and, indeed, to all neoplasms the character of which is in doubt.

If we look into the history of operation for malignant disease we will find much corroborative evidence in support of the view that operation *may* be curative. Butlin† has more recently than any one else reviewed the statistics.

He quotes Von Winiwarter's figures in regard to cancer of the breast to show that the period of three years, which has been proposed and generally accepted as the "period of probation," during which a patient may be considered to be relieved by operation but not cured, is a proper one. In 203 cases of recurrence the disease reappeared in 180 before the end of the first year, in 15 during the second year, in 6 during the third year, and in only 2 after the end of the third year. He thinks therefore that the test is thorough, and that there need be no hesitation in claim-

* "Tumors of the Female Breast," *Philadelphia Medical News*, December 14, 1889.

† "The Operative Surgery of Malignant Disease."

ing that "all persons" who remain well and free from cancerous disease for full three years after the operation (or after the last operation, if there has been more than one) have been cured. I am not willing to regard this test as quite so absolute and unvarying as the above language would indicate. Nor am I willing to consider a second cancer, in an entirely different region in the same person, as of no more force in invalidating the claim of "cure" than is a second case of pneumonia or erysipelas. The continuance of the predisposition to cancer is of course to be expected even after successful operation, but if it is sufficient to bring about a new tumor in a new locality the patient is hardly "cured" by the first operation. But while I desire to state my dissent as to these particulars, I cordially agree with the general rule as above enunciated, and think it a safe guide in estimating the possibility of cure in cancers in general.

An abstract of the statistics collected by Butlin shows that at the end of three years the following proportion of cases showed no signs of recurrence, and that, therefore, there was at least a very great probability that a cure had been effected in those cases:

Region affected.	Cures.	Total number of cases.
Breast	18	190
Ovary	5	47
Uterus	22	100
Vagina	1	24
Vulva	5	31
Testes	4	50
Penis	9	32
Kidney	2	18
Rectum	13	65
Pylorus	0	10
Intestine	0	13
Œsophagus	0	6
Larynx	1	15
Tongue	6	70
Jaws	4	23
Lower lip	160	424
Face	50	147
External ear	6	18
Eye	4	67
Femur	2	7
	312	1357

This table shows, therefore, twenty-three per cent. of cures in carcinomata of all sorts operated on at all stages and under the most varying conditions. It includes a number of operations performed in cases which were, doubtless, hopeless, but called for palliation. The figures have been based on the number of patients who were alive and free from disease (or who died from some non-cancerous malady) more than three years after the last operation, compared with the total number of patients who were treated by operations, and of whose end or condition at the termination of that period there were records. The fatal operative cases are, therefore, included in the totals.

In many of the successful cases the malignant character of the tumors was diagnosticated by the gross appearances and by careful microscopical examinations. Dennis's series of seventy-one cases of carcinoma mammæ shows twenty-five per cent. free from recurrence at the end of three years, but these figures are based on only thirty-three cases out of the seventy-one, as in the remainder there were other varieties of malignant disease, or the clinical or microscopical histories were incomplete.

Sir Spencer Wells* argues in favor of early operation in carcinoma of the uterus and of the ovaries, showing that "to operate early is the best way to avoid recurrence."

M. H. Richardson's statistics† show that in ten cases of cancer of the penis operated on, two were living at the end of eight years and one each at seven, six, five, and three years. In cancer of the lip, face, and scalp the results were still more favorable.

While these facts argue strongly in favor of early operation, others point no less forcibly to the need of making that operation thorough. Heidenhain,‡ in eighteen cases of mammary cancer, examined the gland microscopically after removal. In twelve cases cancerous elements were found at the periphery of the parts removed; in six they were absent. In the former he predicted a rapid recurrence of the disease, in the latter immunity, or much later recurrence, and in each instance his prognostication was correct. Marshall§ has also corroborated these observations, and has called attention to the fact that the usual seat of recurrent growths is not *in* the cicatrix, as is so often stated, but at its margin or directly beneath it; in other words, in the tissues which were nearest to those removed, and therefore most likely to have been implicated. Heneage Gibbes has made parallel investigations with a similar result. Every surgeon understands

* *British Medical Journal*, December 8, 1888.

† *Boston Medical and Surgical Journal*, August 30 and September 6, 1888.

‡ *Fortschritte der Medicin*, August 15, 1890.

§ *Lancet*, November 23, 1889.

the unfavorable influence on prognosis which enlargement of the neighboring lymph-glands has in any case of carcinoma, and knows also the effect in favoring speedy recurrence of failure to remove those glands. Küster has examined the axillary glands removed in one hundred and seventeen cases of carcinoma of the breast, and in only two did he fail to demonstrate the undoubted existence of cancer. In one hundred and twenty-eight autopsies of patients dying from carcinoma of the breast, ninety per cent. had return of the disease in the axilla.* My own experience has now extended over a sufficient length of time to enable me to compare the results obtained in breast cancer for example, in the days when it was customary to open the axilla only in those cases in which the axillary glands were so enlarged that they could be felt through the skin, with the results following the more modern method of systematic cleaning out of the axilla. The comparison is so convincingly in favor of the latter procedure that there scarcely seems to me room for difference of opinion, although so good an authority as Butlin still argues in favor of the older and more restricted operation. I am certain that at present the average date of recurrence, when it occurs, is much later, and that a larger proportion of cases escape altogether, although this proportion is still distressingly small, on account of the fact that the cases are so far advanced before presenting themselves for operation. I am not prepared now to give the figures in support of this statement, and as to many of the earlier cases exact data are unobtainable, but I am none the less positive that the improvement in results has occurred, and I am permitted to include in this assertion the experience of Professor Agnew as well as my own.

I may mention also that for some years I have imagined that in those cases in which infection with pus microbes had taken place before operation, or in those which were accidentally infected during or after the removal of carcinomata, better results as to freedom from recurrence followed. I have no figures by which to test the truthfulness of this hypothesis, which did not occur to me until antiseptic methods had caused the almost complete disappearance of suppuration from operative wounds. I had several cases in mind, however, in which recurrence was long delayed, and some in which apparent cure followed profuse suppuration, and I am now watching with much interest two in which accidental infection has given me the same opportunity. I thought until recently that the idea was original, and had so spoken of it, but have just come across it couched in almost the same language in a lecture of Mr. Christopher Heath, and Marshall† says that among the cases in which hemorrhage had obliged him to reopen the wound and apply some powerful styptic, as perchloride of iron or chloride of zinc, he can find persons now living eight, nine, ten, eleven, and twelve years afterwards. These thoughts are crude and must be taken for what they are worth, but so far as they go they certainly indicate thoroughness of operation.

In an argument in favor of early operation in tumors, there are two factors which should not be altogether ignored, although admittedly of minor importance. In the first place, the presence of a growth of any sort is often a source of much uneasiness and anxiety on the part of the patient, sometimes, in nervous women, bringing about a general breakdown, which reacts most unfavorably on the neoplasm itself, the growth of which is, as we have seen, favored by any diminution in the physiological resistance of the tissues. What is then, for example, the duty of the medical man to whom a young woman presents herself with a small painless movable solid growth of the breast,—*i.e.*, with one lacking the ordinary symptoms of malignancy? He will usually find in such a case that the patient is deeply distressed, that her pleasure is destroyed, her sleep broken, her nutrition affected. She is certain to have known, or, at least, to have known of, some one who has died of a breast cancer, which in the beginning more or less closely resembled the swelling in her own breast. When to these reasons for operation we add the confessed uncertainty of diagnosis in the early stages of even the most malignant growths, and the possibility of a later transformation of a benign growth into one with all the properties of malignancy, we are justified, it seems to me, in saying that prompt operation should be the almost invariable rule instead of the rare exception.

Finally, I desire to mention the possibility that the state of expectant attention which is common to all patients with new growths may of itself exert an unfavorable influence, direct in its character, in addition to the interference with general health and nutrition, already

* Dennis, *op. cit.*

† Ibid., p. 1049.

spoken of. This, I admit, seems like entering into the metaphysics of surgery, and I am far from wishing to assert any definite belief in such influence, but it is not beyond the bounds of possibility. Tuckey thinks * that continuous fixation of the mind upon one special organ predisposes to disease of that organ, and cites illustrative cases. Winslow † says that it is a well-established fact that alteration of tissue has been the result of the morbid concentration of the attention upon particular organic structures. I have recently ‡ collected a number of cases illustrating this point, and only now allude to it in an attempt to approach completeness in this imperfect consideration of a great subject.

The conclusions arrived at may be briefly stated as follows :

1. Theoretical considerations seem to show the possible curability of malignant growths.

2. Statistics strongly support this view.

3. Both theory and statistics indicate early and thorough operations in all tumors which are—*a*, malignant ; *b*, doubtful ; or, *c*, benign, but troublesome either locally or by their effect upon the imagination of the patient.

MERYCISMUS AND ITS TREATMENT.

By Frederick P. Henry, A.M., M.D. §

ABERRATIONS of function dependent upon habit or imitation are not limited to the voluntary muscular system, a fact strikingly exemplified in the etiology and mechanism of merycismus. This term, derived from μηρυκίζω, to chew the cud, is selected in preference to " rumination," because the latter has acquired a double meaning, and is, therefore, misleading ; and is especially preferred because it is employed both by French and German writers.

Merycismus is the voluntary regurgitation of food for the purpose of remastication. It differs, therefore, materially from simple regurgitation, which consists of the involuntary eructation of food, which is either swallowed again immediately or ejected from the mouth.

With reference to the mechanism of merycismus, or rather of the regurgitation, which is the first step in the process, it has been observed that it is always preceded by a rapid inspiration and an equally rapid expiration, the effect of the first being to draw the food by suction through the cardiac orifice, and that of the latter to prevent its return into the stomach. This view of the nature of the process has been confirmed experimentally by Flourens, who was able to render the act of rumination in the sheep difficult or impossible by section of the phrenic nerves and of the medulla spinalis at the level of the sixth dorsal vertebra, the effect of this operation being to paralyze the chief muscles of respiration.

In the etiology of merycismus, heredity and imitation play important *rôles*. It was supposed by most of the medical writers of the seventeenth century, previous to which we have no records of the disease, that the victims of the habit were descended from herbivorous parents, or were themselves possessed of horns, or, like other ruminants, had more than one stomach. Strange to say, two of the earliest cases on record || occurred in men who had horny growths on their foreheads, but who, nevertheless, as demonstrated post mortem by Fabricius, of Acquapendente, had each but one stomach. Heredity, nevertheless, is of undoubted influence, as is shown by the reports of several cases contained in the elaborate article upon this subject by Bourneville and Séglas.¶

The same writers give instances of the origin of the disease through mimicry, of which the following is the most striking : Two children, a boy of 6 and a girl of 3, acquired the habit of rumination from their governess, who was addicted to it, and were cured by her dismissal. Other cases of supposed mimetic origin are more apocryphal ; for example, a ruminating child of 7, who had been suckled by a goat, and a man who had spent his life among cattle. The influence of sex is decided. Of thirty-five cases reported by Bourneville and Séglas, only five were females.

The irritation of the stomach by unmasticated food and indigestible substances is an undoubted cause of the habit of rumination, and accounts for its prevalence among idiots.

The effect of irritation in producing regurgitation is exemplified by an experience of the distinguished French physiologist, Brown-Sé-

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* " Psycho-Therapeutics," 1890, p. 4

† " Obscure Diseases of the Brain and Mind."

‡ *Annals of Surgery*, August and September, 1891.

§ Professor of the Principles and Practice of Medicine in The Women's Medical College of Pennsylvania.

|| *Vide* A. Johannessen, "Ueber das Wiederkäuen beim Menschen" (*Zeitschrift für Klin. Med.*, Bd. 10, s. 274).

¶ " Du Mérycisme" (*Archives de Neurologie*, 6 and 7, 1883).

quard. In the course of some researches on digestion, he was led to practise upon himself an experiment first performed by Spallanzani, which consisted in swallowing a small sponge attached to a thread for the purpose of obtaining a sample of gastric juice. He soon became unable to retain the sponge for the short period required, and was obliged to desist from further auto-experiments in this direction; but, for some time afterwards, much to his annoyance, the food continued to be regurgitated.

The interval between the repast and the act of rumination is not constant. It may vary between a few minutes and an hour, but, on the average, begins about fifteen minutes after eating. The food is returned to the mouth in an almost unaltered condition, and seems to be enjoyed with a keener relish than when first swallowed.*

This probably accounts for the time consumed in this second mastication, which has been observed to extend to several hours. Many of those addicted to the habit practise it after every meal, while others only do so upon special occasions; for example, when they have bolted their food with unusual haste, or have consumed an inordinate quantity, or have taken severe exercise immediately after eating.

The general health is usually well preserved, while in other cases signs of gastric catarrh may appear, this being generally due to the fact that even the second mastication is too hastily performed. When this complication arises, the patient complains that the taste of the regurgitated food, previously agreeable, has become sour or rancid. The health continues good so long as the food continues pleasant to the taste, is thoroughly remasticated, and again swallowed.

Patients with this affection should be directed to eat slowly, to masticate their food thoroughly, and to endeavor by an effort of the will to repress the muscular movements which call forth the act. This may be aided by the dorsal decubitus, or some other position unfavorable to its accomplishment. Bulky food, such as vegetables and bread, is inadmissible, and the diet should consist, for a time, chiefly of nutritive fluids. The ingestion of small pieces of ice after meals has been attended with benefit, and is supposed to act by improving the tonicity of the stomach. Tonics and purgatives have seemed of service in some cases, and probably exert their beneficial action upon any underlying state of asthenia that may be present. Strychnine should be given a thorough trial, and the same is true of electricity, both externally to the abdominal muscles, and internally to the cardiac orifice of the stomach. Bourneville and Séglas are of the opinion that where the affection has existed for many years without impairment of health, it is unwise to attempt to suppress it, but surely the risk of a temporary impairment of health should not be admitted as an excuse for persisting in so disgusting a habit.

* "Indeed, it is sweeter than honey, and accompanied with a more delightful relish" (Anthony Rechy). I have been unable to verify this quotation, which is from Ewald.

NOTES ON THE CHARACTER AND TREATMENT OF THE PRESENT EPIDEMIC OF INFLUENZA.

By M. Howard Fussell, M.D.†

IN the practice of the writer, which extends over the Twenty-first Ward of Philadelphia and the surrounding district, many cases occurred during the winter of 1890 and 1891 characterized by slight fever and a catarrhal condition of many or all of the mucous tracts. None, or but few, of the cases had the characteristics of the severe epidemic of influenza of the previous winter, and the writer thought best to designate such cases as catarrhal fever as best describing their characteristics and as tending to abate the fear of a return of the epidemic of 1889 and 1890. All through the fall of the present year similar cases have constantly occurred in his practice, and were given a like designation for the reasons stated above. About the beginning of the present month (December, 1891), however, scattered cases occurred which more closely resembled a true influenza, and at the present time (December 19) there rages in this district a severe epidemic of what is assuredly influenza. The characteristics of cases observed by the writer and his associate, Dr. William Fenn, are the following: A more or less sudden onset, general rheumatic pains, sore throat, without any exudation, a more or less severe bronchitis, flushed face, and but a moderately high temperature, of an average of 102°. It has seemed to the writer that a moderately sharp line can be drawn between two sets of cases; one, the most common, marked by an unusually

† Instructor of Clinical Medicine in the University of Pennsylvania.

severe bronchitis and a temperature rarely exceeding 101°, with little or no rheumatic pains; the other, with higher fever, more sudden onset, darkly flushed face, and the characteristic of rheumatic pains. In children the attacks have been ushered in with almost no exception with severe vomiting, uncontrollable by the usual remedies used in vomiting of children. One or two adults have also been affected with severe vomiting. The first or bronchitic attacks last longer than the second division, and the bronchitis has yielded but tardily to treatment. It is, of course, too soon to speak definitely of sequelæ; however, so far but four cases have developed any train of symptoms which can truly be called sequelæ. Three of these, curiously enough, all in the outlying district of Lafayette, are suffering from excruciating facial neuralgia. These attacks of pain begin early in the morning, and last with great severity until about four o'clock in the afternoon. Large doses of quinine have absolutely no effect upon the attacks of pain. A fourth case, with a sequel, occurred in a workingman of good habits, not a drinker. He had a rather protracted attack, the fever lasting four days. On the fifth day, after the disappearance of all symptoms, the man suddenly became demented, his aberration of mind consisting in a fixed delusion of some persons constantly following and annoying him. On all other subjects he was perfectly sane. He was put upon 20-grain doses of bromide of potassium every two hours, and within forty-eight hours was entirely well.

No cases of pneumonia have developed even in old persons. The exhaustion which follows the attacks, except in rare cases, is not nearly so marked as it was in the epidemic of two years ago. All of the cases have recovered so as to be about their work in a week or ten days, and many in a much shorter time.

The bronchitis which characterizes the first set of cases resembles in all respects an ordinary attack of acute bronchitis, with a hard, dry, brassy cough, with much oppression under the sternum. This stage has been best treated with a mixture as follows, modified to suit varying circumstances:

℞ Morphinæ sulphatis, gr. ½;
Potassii bromidi, ʒi;
Potassii citratis, ʒii;
Syr. ipecac., fʒii;
Succi limonis, fʒiss.
Syrupi, q.s. fʒiii. M.
Sig.—Two teaspoonfuls every two hours.

Usually after using this mixture for twenty-four to thirty-six hours, secretion was fairly established. The morphine and bromide were added to lessen the painful and spasmodic character of the cough. After the mixture has been used for a sufficiently long time, the citrate of potassium is replaced by chloride of ammonium, and the ipecac by squill, as in the following mixture:

℞ Morphinæ sulph., gr. ½;
Potassii bromidi, ʒi;
Ammon. chlor., ʒi;
Syrup. scillæ, fʒii;
Mist. glycyrrhizæ comp., q.s. fʒiii. M.
Sig.—Two teaspoonfuls every three hours.

After three or four days' treatment with this mixture, the bronchitis has usually been controlled.

In the second group of cases, where the pains and headache were the predominating symptoms, a mixture of salol and phenacetin was used, either in the form of powders or one of the pills containing these drugs which are manufactured on so large a scale, the latter being the more elegant form for prescribing. The following prescription was usually written:

℞ Salol, ʒi;
Phenacetin, gr. xxxvi.
Ft. chart. no. xii.
Sig.—One powder every three hours.

When the bronchitic cases were marked by especially severe pains, both the cough mixture and the above powder were prescribed. Antipyrin was seldom used, because phenacetin usually answered, and was considered safer.

Quinine has been used but little, all of the symptoms being controlled admirably by the above course of treatment. The vomiting which characterizes the attacks in children yields better to 1-grain doses of salol and phenacetin than to the bismuth mixtures ordinarily prescribed.

Convalescents improved rapidly upon strychnine. Where the patients were not fastidious, the following rather unpleasant mixture was prescribed, with the happiest results:

℞ Tr. nucis vomicæ, fʒi;
Acid. nitro-hydrochlor. dil., gtt. xxxvi;
Infus. gentianæ comp., q.s. ad fʒiii. M.
Sig.—Two teaspoonfuls every three hours.

Or a pill of strychnine, iron, and arsenic was prescribed.

Judging solely from the cases personally observed in this epidemic, the writer holds the opinion that the present epidemic is more likely a severe ordinary influenza and not a return of *la grippe* of two years ago. This opinion may, of course, be changed by further observation or by the medical reports which will be given by observers in the near future. I am disposed to this view for several reasons.

First.—The entire absence of pneumonia.

Second.—The absence of the extreme exhaustion, which was so characteristic of *la grippe*.

Third.—The absence of the serious and fatal sequelæ, which so frequently followed the attacks of 1889 and 1890.

XEROSIS CONJUNCTIVA AND ITS TREATMENT.

By Charles W. Kollock, M.D., Charleston, S. C.

In a paper, entitled "A Form of Xerosis," which was read before the American Ophthalmological Society in 1890, the writer gave a brief description of the disease as it occurred among negro children in Charleston, S. C. It was described as follows: "The conjunctiva has a dirty-white and yellow-green hue, that gives the eye a most disagreeable appearance. The portion of the conjunctiva visible between the lids is darker than the rest of the membrane, and generally thicker near the corneal margin. The pigment is distributed well back into the retrotarsal folds, but does not invade the palpebral conjunctiva. The ocular conjunctiva may be merely thickened and discolored; or, in addition to the discolorization, it may be relaxed and flabby, so that every movement of the eyeball throws it into folds or wrinkles about the cornea. These are more noticeable latterally, but in some cases entirely surround the cornea. Occasionally these folds are capped by the silvery scales which have been described as diagnostic of hemeralopia; indeed, the parents of a few of the children have mentioned night-blindness as the sole cause of bringing them for treatment.

"The conjunctiva of the lids has never been found in a granular or contracted condition, but is generally in a state of passive congestion, and in no case has the disease been known to follow an ophthalmia. The ocular conjunctiva is dry and scaly, and closely resembles in appearance the skin of the cavalla, or pompino fish.

"The condition of the cornea is extremely interesting. Frequently it is bordered by an ulcerating ring, that is generally below the surface, but at times is slightly elevated into a soft, grayish ridge. This ulceration has never been seen to encroach farther on the cornea, though the circle is somewhat broader at its upper and lower quadrants. The edges of the cornea are always hazy, whether ulcerated or not, but the centre may or may not be clear. A bluish, hazy sheen is a common condition, which, upon close inspection, is found to be due to a partially opaque state of the epithelium.

"The eye is not painful, nor is there any photophobia; but, on account of the low vitality of the majority of the patients and their ages (from 1 to 8 or 9 years), it was impossible to obtain accurate information about subjective symptoms."

Since the above description was written, the writer has been obliged to change his views in some respects, and a closer study has brought out points not before mentioned. In several cases, recently observed, granulations were found to cover the retrotarsal folds, but rarely to extend lower, on the ocular conjunctiva.

At times the eye, instead of being dry and scaly in appearance, is very watery, the tears having an oily tenacity and clinging to the ball. In a few instances a slight mucopurulent discharge was noticed. Apparently there was no occlusion of the tear-passages, but the tenacious condition of the tears or conjunctiva prevented drainage. The watery eye is probably the earlier stage of the disease.

In one case the ulceration not only extended from the periphery to the centre of the cornea, but ended in a perforation and evacuation of the contents of the globe. The cornea of the fellow-eye became almost entirely opaque from hazy epithelium, the child (between 1 and 2 years of age) wasted and died. Unfortunately, a post-mortem examination was not obtained. In no other instance has an eye been lost.

The majority of cases have been among scrofulous and ill-nourished children; but in a few instances a fair physical condition was found.

The disease has never been seen by the writer in any place but Charleston, though he spent a year as resident physician in the Wills Eye Hospital of Philadelphia, and visited the principal eye clinics of the large European cities. Dr. Koller, of New York,

in discussing the original paper, mentions having seen such cases in Austria. Dr. H. D. Bruns, in a letter to the writer, says he has often seen the same condition in New Orleans, and thinks it a form of phlyctenular disease.

The cause is somewhat obscure. Dr. Koller believes it may be due to an irritation, such as is caused by sunburn on the skin; that it occurs in epidemics, especially in orphan asylums; and that there is usually some surface of water or white wall in the immediate neighborhood, which reflects the light. Charleston is almost surrounded by water, hence this theory may be correct, but there has been no epidemic. The season of the year seems to have no influence, and the disease as yet has only been found among negro children, while the cases which Dr. Koller saw in Austria must have been among whites. The pigmented condition of the ocular conjunctiva is accounted for by its exposed position, and in its altered physical condition must more nearly resemble true skin, and hence the pigmentary deposits take place.

The *treatment* must, of course, vary somewhat with the condition of the patient, and consist of local and constitutional. In the early stages, when the conjunctiva is hyperæmic, the weak astringent and antiseptic collyria (a saturated solution of boric acid, or bichloride of mercury 1 : 10,000) will answer; but when granulations are found in the retrotarsal folds, and the ulcerating ring surrounds the cornea, the best results are obtained from nitrate of silver (gr. v to f℥i), an ointment of the yellow oxide of mercury (gr. i to ℥i), and instillations of atropine (gr. iv to f℥i) or eserine (gr. ⅓ to ⅙ to f℥i).

When extensive ulceration of the cornea exists, more stimulating agents must be employed, for the cornea of the eye is then in a condition more nearly resembling necrosis, though fortunately these cases are rare. The actual cautery, eserine, and strong solutions of nitrate of silver should then be employed, but the general condition of the patient at such times is so low that treatment will usually be unavailing.

Constitutional treatment, along with the local remedies, is imperative from the beginning. Cod-liver oil, syrup of the iodide of iron, better sanitary surroundings, and, if possible, removal to the country, should be advised; but occurring, as it does, among the poorer and more ignorant class of negroes, the future is not bright. Some recover in spite of neglect; others drag on, and are finally lost sight of, but only one case has been known to die. The pigment remains, a permanent trace of this interesting and not thoroughly-understood condition or disease.

ACUTE RHEUMATISM AND ITS TREATMENT.

By James Tyson, M.D.*

WHILE the comparative study of disease in the light of modern knowledge demands that acute rheumatism be classed among the infectious diseases, it is acknowledged that no pathogenic organism has, as yet, been discovered in the blood of those affected. An exciting cause seems, however, to be necessary in the majority of cases, and exposure to cold is the most common, although epidemics of acute rheumatism occur quite independently of such exposure. While sudden changes in temperature, too, often afford the needed conditions, the continued action of moderate degrees of cold, especially when accompanied by moisture, is almost as frequently responsible. If to these be added a lowered vitality due to insufficient food, fatigue, or grief, or all of these combined, we include most predisposing causes. The winter and spring, being the seasons in which the conditions of temperature and moisture operate most strongly, are those in which the disease is most prevalent. For a like reason the temperate zones find more cases, the extreme north as well as the extreme south being for the most part exempt. In my own experience, the late spring finds many cases due to the cold and dampness of houses where fires have been prematurely dispensed with.

Acute rheumatism is a disease simulated by other affections not infrequently called rheumatic. Thus, scarlet fever is often accompanied by a painful swelling of the joints due to the specific cause of that disease, and called rheumatic, when it should be spoken of as scarlatinal synovitis. The same is true of the so-called gonorrhœal rheumatism, which is not a rheumatism, but a gonorrhœal synovitis due to a specific cause or a consequence of it.

Symptomatology.—While rheumatic fever is seldom ushered in by a chill, there is more frequently a short prodrome of a day or two,

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during which the patient feels uncomfortable or has an unpleasant aching feeling in his joints. More often, however, the pain in the joints, which is the first symptom to attract attention, develops rapidly, coming on in a single day or night, or seemingly in a much shorter time, making locomotion at once difficult or impossible.

The joint-affection has some peculiarities. In the first place, the involvement is almost always multiple, and generally includes the larger joints, such as the knee, ankle, elbow, wrist, shoulder, and hip, although none are exempt, and the phalangeal and metacarpophalangeal articulations also suffer. The toe-joints escape most frequently. It rarely happens that a single joint is involved, but its occasional occurrence must be admitted. More rarely, if ever, does it happen that all are affected, although even the vertebral articulations must sometimes be included.

While the joint-affection always includes a synovitis, the process is by no means confined to the synovial membrane. The adjacent structures, including the capsular and lateral ligaments, and the tendons, with their sheaths, coursing over the joint, and even muscles, are all the seat of involvement, contributing to the swelling and to the pain by the exudation pervading them. Comparing two hands, one of which is involved and the other not, one can often see the depressions between the metacarpal bones in the former obliterated by swelling, while they maintain their usual distinctness in the latter. It is for such reasons that I prefer the name "acute rheumatism" to that of acute "articular" rheumatism, which would limit the process to the joints.

The joint-inflammation is further characterized by a tendency to fly from one joint to another. Now it will be the elbow, then the wrist; again, the knee, and then the ankle or shoulder or hip, either on the same side or the other; but while there will be a reduction in the degree of the inflammation and its consequence in the relieved joints, the relief will not be total. On another day, again, the pain will have returned to the joint which has been temporarily relieved.

The pain is almost always extremely severe, making all motion an agony, while jarring of the bed and even the motion of the floor produced in walking may cause the patient to cry out from pain. To diminish the tension which aggravates the pain, the patient is disposed to lie with all the limbs semi-flexed. The pressure of bedclothing or the touch of an attendant may so increase the pain as to cause the patient to cry out.

From the beginning there is fever, but being seldom of high degree at this stage, it is not commonly the first symptom to attract attention. Later, it usually increases proportionately to the extent of joint involvement, but is rarely very high, or exceeding 104° F. Nor does it pursue a course at all distinctive. Occasionally, however, there is intense hyperpyrexia, when the temperature rises rapidly from 104° to 110° F., and even higher. With this is associated cerebral symptoms of an alarming and dangerous kind, intense headache, and delirium, symptoms otherwise rather unusual in acute rheumatism. To these are often added unconsciousness, pulselessness, and cyanosis, rapidly followed by death, unless the temperature is promptly reduced. The sudden onset of these symptoms adds to their alarming character.

The pulse in rheumatic fever is rapid, often disproportionately so to the fever, probably because of the nervous demoralization caused by the acute suffering.

Next to the fever and joint inflammation, the most distinctive symptom of acute rheumatism is the sweating, which is copious and usually acid in reaction, sometimes even to such extent as to impart an acid odor to the air of the room. Sudamina are a frequent consequence of such profuse sweating.

Discolorations of the skin varying in intensity and character make their appearance in certain cases. There may be a simple diffuse erythematous redness, or it may be papular, or tuberculated, or marginate. There may be true urticaria, or there may be extravasations of blood, purpuric patches of such extent and depth as to result in sloughing of the tissues, hemorrhages from the mucous membranes, and hæmaturia. In one case under my observation there ensued permanent blindness from extravasation into the retina. These cases of *peliosis rheumatica* are not acknowledged by all to be truly rheumatic in their origin, the joint-affection being declared to be of a different nature, analogous to what occurs in scorbutus and hæmophilia.

The urine is also somewhat characteristic. It is scanty, of high specific gravity, acid in reaction, and deposits a copious sediment of pink-hued mixed urates.

Very interesting in connection with acute rheumatism is the frequent involvement of the serous membranes other than those of the joints, such as the pleural membranes and the peritoneum. The involvement of the

former simulates pleurisy, and the latter peritonitis, and I well remember a case of my own, a girl of 8 years, in whom for days I thought I was dealing with peritonitis, when a few doses of salicylate of sodium relieved my anxiety by promptly arresting the disease. In rheumatism of the pleura, the absence of physical signs aids in the diagnosis. These phenomena are easily explained with the modern views of the etiology of rheumatic fever, since we have only to suppose the infectious material circulating in the blood to lodge upon the serous membranes instead of the joint tissues.

Of the same class is a much more common complication, cardiac disease including endocarditis and pericarditis, the former being by far the more frequent, and confined almost exclusively to the left heart. Again, the mitral leaflets are much more frequently attacked than the aortic. While the cardiac involvement bears some relation to the severity of the disease, the mildest cases may become complicated as well as the severest. Hence the heart should be daily examined, and for the further reason that the approach of the disease is often exceedingly insidious. On the other hand, cardiac oppression and palpitation may occur without actual structural change, and even a functional murmur may occur in acute rheumatism, and this, too, not only at the base, but also at the apex of the heart, an unusual site for a functional murmur.

The proportion of cases in which cardiac complications occur, though difficult to estimate precisely, is not less than twenty-five to thirty-three per cent. for endocarditis, with ten per cent. more for pericarditis, making in all thirty-five to forty-three per cent., while some estimate even a larger proportion. Young subjects are more vulnerable than adults, and Fagge mentions an interesting difference in the sexes after adult life, which is, that *pericarditis* is more frequent in men above 25 than in women of the same age, probably because at this age men work much harder than women.

The variety of endocarditis is usually the verrucose, or warty, ulceration, laceration or perforation of the valve flaps being very rare. While the endocardial murmurs in the endocarditis of acute rheumatism are commonly soft, the pericardial murmurs are often loud, rough, and rasping, and the vibration resulting from the friction may even be communicated to the hand laid upon the præcordium. Both conditions may result in complete recovery, but the former more commonly is the beginning of a chronic valvular defect.

Disposition to recurrence must be mentioned as a characteristic feature of acute rheumatism. Quite rarely does a person who has had one attack escape another, and it is these successive attacks which, augmenting previous cardiac lesions, finally cripple the heart until its work is greatly hampered. The intervals between successive attacks are various,—from a year to four or five years,—and they are the more frequent and more liable to occur the younger the subject.

The *complications* of rheumatism are generally the direct result of the poison. They include the inflammations of the serous membranes mentioned, bronchitis, and, more rarely, pneumonia. Convalescence from the latter is said to be slow. The sequelæ directly traceable to acute rheumatism are also few. Chorea, acute nephritis, and exophthalmic goitre are among those so regarded. The nephritis is perhaps better considered a complication resulting from the same cause, just as are the endocarditis, pleurisy, and peritonitis.

Diagnosis.—The diagnosis of acute rheumatism is seldom difficult, the multiple painful involvement of the joints, the fever, and sweating seldom mean anything else; but pyæmia, scarlatinal and gonorrhœal arthritis must be remembered as possible events.

It is the monarticular variety which demands most discrimination in its determination. Traumatic synovitis, tuberculosis or white swelling, and the so-called nervous arthropathies are to be eliminated.

It is not always easy at a first visit to distinguish gout from acute rheumatism, but the most serious possible error in diagnosis is to mistake a pyæmic arthritis for a rheumatic arthritis. This is not an uncommon mistake where there is no evident surgical lesion to suggest it. Osteomyelitis is said to be the most common cause of such pyæmias; but other bone-diseases, puerperal sepsis, and gonorrhœa are also causes.

Prognosis.—The course of acute rheumatism is characterized by many fluctuations independent of treatment, and its duration is various. Sooner or later recovery generally takes place, although it may be with a crippled heart and a susceptibility to return. More rarely the attack passes over into a subacute condition which makes the patient a sufferer for a long time, while still more rarely true chronic rheumatism is the result.

Treatment.—Whatever may be the drawbacks to a successful treatment of acute rheumatism, and they are many, it is certain that most of those who had to treat this disease a quarter of a century ago now attack it with much more confidence than they did in that day. The drug which is responsible for this feeling is salicylic acid, and very few physicians think of any other at the outset of a typical case. The introduction of salicylic acid as a remedy for acute rheumatism is commonly ascribed to Buss, of Basle, some time prior to 1876, but attention was first prominently drawn to it in the latter year by Dr. Stricker, of Traube's clinic in Berlin.

Salicylic acid and salicylate of sodium are equally efficient, but the former has been largely superseded by the latter, because of its less irritating nature and easier administration. Whichever of the two is used, there is one necessary condition of its efficiency, and that is its constitutional impression. The aim in the administration is, of course, to relieve the patient, but this effect is seldom obtained, or, if obtained, is of fleeting character, until the peculiar ringing in the ears is secured. To do this in the adult a drachm and a half to two drachms of salicylic acid and from two to three drachms of the sodium salicylate in the first twenty-four hours are required. If the salicylic acid is given, it should be in capsules or compressed pills, containing 7½ grains to 10 grains, every two hours, followed by a little water or milk. The salicylate of sodium may be given in doses of 10 to 15 grains in solution every two hours, or every hour if the pain is severe, until relief comes, after which it should be kept up until the toxic effect is produced, when the dose should be diminished, but the drug continued; or the interval may also be prolonged. This is the practise I have found most satisfactory. Others would give the salicylate of sodium, 1 to 1½ drachms in a single dose, but in my experience few stomachs will submit to such quantities. The doses laid down may be pushed more rapidly if the suffering is extreme, but I have seldom found it necessary. Under this treatment, the pain fades away, the swelling diminishes, and the anxious expression of the patient is changed to one of comfort in from twenty-four to forty-eight hours. Those who object to the salicylate treatment do so on the ground that the relief is not permanent, and it must be admitted that relapses do occur. I am confident, however, that this is often due to the fact that the remedy is too soon discontinued. As stated, the drug, while it should be cut down with the appearance of relief and toxic effect, must be continued for some time after relief is obtained.

Salicin, first used by Maclagan, appears to be about as efficient as salicylic acid, given in 20-grain doses every two hours, in suspension or dissolved in warm water. It is much less irritating than salicylic acid, but has not superseded it on this account.

I do not, however, rely wholly upon the treatment by salicylates. Warmth is commonly a useful adjuvant, and to this end the joints and limbs should be kept surrounded by warm flannels or carded wool or cotton. The opposite plan, treatment by cold, is also recommended by some.

But the salicylate treatment is not always successful, and sometimes the drug is not well borne. Then the oil of wintergreen should be tried, in doses of 10 to 15 minims every two hours, in capsules or in emulsion. Or it may be alternated with the salicylate, if it is a question of tolerance of the latter, the gaultheria being usually better borne for a time by the stomach. I say for a time, because, however pleasant wintergreen is at first, its continued use is apt also to excite disgust.

The alkaline treatment of acute rheumatism, most relied upon before the salicylic treatment came into vogue, is a treatment which is by no means worthless. This, originally instituted by Garrod, received an additional impulse from the late Dr. Fuller, who insisted upon the administration of such doses as secured and maintained an alkaline reaction of the urine. This is accomplished by sufficient doses of almost any of the alkaline salts, as potassium citrate, potassium acetate, sodium carbonate, or *liquor potassæ* may be used. Twenty grains every two hours of the first three are generally sufficient, or 20 minims of the last.

While I was in the habit of using the alkaline treatment before the salicylate treatment came into use, I usually combined it with the "flying" blister, using one of small size,—say an inch square,—and applying it now to one joint and then to another. That this practice was efficient in the relief of pain, I am confident. That it had any effect in cutting short the disease, I am not so certain, and since the introduction of the salicylate treatment, I have discontinued it as no longer necessary. In the subacute and chronic stages of the disease, the treatment by counter-irrita-

tion—by blisters or iodine—is more imperatively called for.

Failing for any cause in the treatment with salicylic acid, what is called the "mixed" treatment may be employed. By this is meant the alternate use of the salicylates and alkalies. This may be tried, for example, where sufficient doses of the salicylates are not well borne by the stomach, when they may be supplemented by alkalies.

The treatment of the hyperpyrexia of acute rheumatism must be prompt and energetic, as the danger to life is imminent, the extraordinary high temperatures thus encountered being inevitably fatal in a few hours. There is but one treatment, and that is unmistakable. It is the application of cold. The bath is to be preferred, although in its absence affusions of ice-cold water and rubbing the head and body with ice may be substituted. As soon as the temperature begins to mount rapidly above 105° F. it should be used, and if delirium or unconsciousness is associated with such temperature this treatment should be instantly instituted. Where time permits, the application of cold may be more gradual. Thus the patient may be put in the bath at 70° F., and the temperature further reduced, if necessary, by the addition of ice or colder water. As stated, there seems now to be no doubt about the propriety of this treatment. Numerous cases of recovery have been reported, some even where the temperature had reached 107°, 108°, and even 109° F. and a fraction. With the reduction of temperature, the cerebral symptoms gradually disappear.

As the disease becomes more subacute or chronic, the necessity for more active local, associated with tonic treatment, becomes manifest. It would seem that at such stage the pathogenic cause has exhausted itself, and the disease has become more a local one, maintained by the dyscrasic state of the blood, itself brought about by the long suffering. Hence roborant treatment with iron, arsenic, cod-liver oil, wine, and good food becomes necessary. Indeed, the patient with acute rheumatism should be well fed throughout. Counter-irritation by iodine or by blisters well kept up, but appropriately intermitted, is necessary, although the results are often slow in appearing. Massage is especially valuable, and often surprisingly soothing ultimately, even although at first somewhat painful, while the mobility of the joints is gradually restored. There results sometimes in the muscles of the neighborhood of the joint, and especially in the case of the shoulder, a paretic state, which is also benefited by massage, especially when associated with electricity.

Some allusion needs to be made to remedies now more or less obsolete, which have had some reputation in the treatment of acute rheumatism. First should be mentioned propylamine or triethylamine. This was introduced with quite a flourish a little more than twenty-five years ago, and is still used by some, and it cannot be denied that it may be of some use. I have known a combination of triethylamine with liquor potassæ to be signally efficient, but it would be impossible to say which of the two remedies was responsible for the cure.

The bromide of ammonium has the endorsement of Dr. J. M. Da Costa in the quantity of 1 to 1½ drachms in twenty-four hours. Dr. Rees, of London, recommended lemon-juice, but it fell rapidly into disuse, except as a menstruum.

NEPHROTOMY FOR CALCULUS PYELITIS.

NEPHRECTOMY RIGHTLY DECIDED AGAINST BECAUSE OF THE SMALL PERCENTAGE OF UREA; AN APPARENTLY ALMOST DESTROYED AND USELESS KIDNEY FOUND TO SECRETE OVER FOUR AND A HALF TIMES AS MUCH URINE AS THE OTHER KIDNEY; DEATH.

By W. W. Keen, M.D.,* and David D. Stewart, M.D.†

MISS L., aged 31; height, five feet three inches; weight, one hundred and four pounds; best weight over one hundred and twenty pounds some ten years ago; was first seen by Dr. W. W. Keen, January 17, 1891. She has lost only four pounds in the last three months. One paternal uncle is the only case of tubercular disease known in the family. Patient has always been delicate, and at the age of 5 had an anterior curvature of the spine. She recovered in two or three years, during which time she went on crutches. No abscess and no paralysis resulted.

For about two years she has had intermittent attacks of pain in the left loin. At first these attacks were from three weeks to two

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months apart, and lasted from several hours to one or two days. The pains were always in the left loin, and had a tendency to shoot towards the epigastrium and towards, but not into, the bladder. The attacks were accompanied with a desire to urinate, and the urine at this time was high-colored but clear, containing no deposit. Her general health was good.

During the latter part of last August she had what she called chills and fever, and coexistent with this development the pain in the loin became constant and remained so. She had no night sweats. The chills were probably septic.

Dr. Stewart first saw her on December 3, 1890; she had then been in bed for three weeks. She was very dyspeptic and constipated. Her temperature did not rise above 100° F. The urine at this time was normal in amount, and when lithia-water had been taken, had sometimes run up to two quarts. In an eight-ounce bottle of urine there was about half an inch of sediment. The urine was examined, frequently under the microscope, and found to consist chiefly of pus; in addition, there were some large cells, probably from the pelvis of the kidney or from the ureter, and considerable squamous epithelium, probably from the bladder or vagina. There were some red blood-cells, and on two occasions granular and hyaline casts were found. In the later specimens there was also a little uric acid, but no oxalates. The urine was always acid, even after standing three or four days. The amount of albumen was in proportion to the amount of pus.

Tubercle bacilli were repeatedly searched for by Dr. Stewart, with negative result.

There was always tenderness on pressure, most marked in the left loin over the kidney, but also detected over the left half of the abdomen and back. There was decided tenderness posteriorly and increased dulness and slight but perceptible fulness over the left loin and kidney.

A careful survey of the subjective and objective symptoms by Dr. Stewart having led him to make a diagnosis (rather by a process of exclusion than otherwise) of calculus pyelitis, he arranged for a consultation with a view to operation.

January 17, 1891. A slight, rather delicate woman in fair health; has been permitted to walk about the house restrictedly. It causes fatigue but no pain to go up and down stairs. Walking itself produces fatigue but no pain, but it is followed by an increase of pain. Appetite good. With the exception of the last two or three nights, has slept pretty well.

Examination shows the upper part of the sternum to be very prominent; the lower half is deeply cupped and seems to be bifurcated. Distinct fulness on the left side of the abdomen below the border of the ribs, also increased resistance. Pressure produces distinct pain. The lower limit of resistance is the anterior superior spine. Dulness begins gradually at two to three inches to the left of the umbilicus and goes around to the left flank. When lying on her face there is slight prominence of three of the lumbar spines. No fulness appears in either loin. Pressure just below the last rib on the left side produces pain. Bimanual pressure produces pain, which is greatest in front. In the prone position the fulness in the abdomen is much more marked, and gives a sensation of an almost globular mass about the size of a fist. Dulness begins on the left side posteriorly at the tenth rib. Right loin far more resonant; in fact, the renal dulness is scarcely perceptible. No perceptible enlargement of the spleen. Lungs and heart negative. Urine, specific gravity 1011; acid; pus; club-shaped cells; pavement epithelium; slight amount of albumen; no sugar.

January 26, 1891. The quantity of urine having fallen to fifty ounces, its specific gravity to 1010, and the percentage of urea being only .8 and the amount one hundred and ninety-two grains, we decided to postpone the operation, which had been appointed for to-morrow, and Dr. Stewart prescribed citrate of potassium to stimulate the right kidney into greater activity.

January 27. The amount of urine to-day has risen to seventy-six ounces, and the urea is .8 per cent. and the amount two hundred and ninety-two grains.

For some time after this the quantity of urine remained moderately high, but the urea fluctuated between about one and one and a quarter per cent., never rising above this latter figure, and the total amount being generally less than one-half of the normal. As her health was evidently gradually failing, it was finally decided to operate in order to evacuate the pus. But, as stated to the gentlemen present, it had been decided *not* to remove the kidney on account of the small percentage of urea, which showed that the opposite kidney was not doing its proper work, and nephrectomy would be inevitably and quickly fatal.

Operation, February 9, 1891. Ether; right semi-prone position. The distance from the last rib to the crest of the ilium, even when the patient was most favorably placed, was only two and a half inches. I was confirmed in my decision not to remove the kidney, inasmuch as the specific gravity of the urine had fallen to 1008 and the urea to one hundred and forty grains. In view also of the known suppurating condition of the left kidney, in spite of the narrow distance in the loin, I decided to do an exploratory lumbar operation, carrying the incision well forward into the anterior abdominal wall, should any possible necessity arise for the removal of the kidney. An oblique incision was made in the loin about five inches long. The kidney was very soon reached, and touch convinced me that it was filled with fluid, which was confirmed by an incision. The whole kidney was found to be dilated into one great cavity containing a whitish-colored urine, the white color being due to pus and some *débris*. The finger could barely touch the upper limit of the cavity, three and a half to four inches above the last rib, and reached downward one and a half to two inches. We estimated that about a pint of liquid escaped. The thickness of the sac was less than one-eighth of an inch. No bleeding took place. The cavity was markedly sacculated at various points. No calculi existed free in the sac. By the finger I detected what I thought to be the ureter, and my finger was scratched at this place by the sharp point of a stone. The electric light enabled me admirably to examine the entire interior of the sac. With a pair of forceps I dilated the mouth of the cavity in which the stone lay, which I now saw was the mouth of a contracted calyx. Two stones were detected here, of small size, rather irregular surface, and extremely adherent, so that every attempt to remove them by forceps and scoop brought on a rather violent hemorrhage.

The general condition of the patient showed that she could not bear much loss of blood or further shock, and I decided that the wisest course to pursue was to stitch the mouth of the cyst to the abdominal wall and drain, leaving to the future the escape or the removal of the calculi through the fistula, or the removal of the kidney itself, as should seem best. The amount of blood lost was perhaps ten or twelve ounces. Bleeding was controlled quite readily by washing out with hot water, but recurred easily at every interference.

February 10, 1891 (first day). The patient passed a fairly comfortable night, sleeping considerably; temperature 99.2° F. Four hours after the operation two ounces of fluid were drawn, mostly blood, showing that the left ureter was pervious. In the twenty-four hours following the operation only nine ounces of water were passed by the bladder; after one catheterization she was able to pass water voluntarily, and no blood appeared. As part of the urine came from the left kidney, it shows that the right kidney was doing but little work. The dressings were changed on the evening of the ninth and the morning of the tenth day; they were very abundant, but were entirely soaked through. At the second dressing even the bed was quite wet from the amount of urine passed through the drainage opening. As nearly as I could estimate, at least a pint was discharged in this way. The dressings were slightly stained with blood, but the amount was not large. She has felt quite comfortable, excepting for some gas in the stomach. Her diet has been entirely liquid; her appetite has been good.

The following is a memorandum of the quantity of urine passed from the bladder day by day; it therefore includes all the urine from the right (unoperated) kidney and some from the left.

1891.		
February	10	9 oz.
"	11	14 "
"	12	12 "
"	13	7 "
"	14	5 "
"	15	5 "
"	16	6 "
"	17	9 "
"	18 (47 from left kidney.)	10 "
"	19	11 "
"	20	16 "
"	21	12 "
"	22	14 "
"	23	15 "
"	24	9 "
"	25	9 "
"	26	9 "
"	27	10 "
March	1	10 "
"	2	12 "
"	3	10 "
"	4	10 "
"	5	13 "
"	6	17 "
"	7	34½ oz.
"	8	27 oz.
"	9	29 "
"	10	31 "

March 10 (twenty-ninth day). Within twenty-four hours she was practically over

the immediate effects of the operation. Her temperature rose on the third day to 101.4° F., but after that fluctuated between normal and 100° F. until the eleventh day, when there was an evening rise of 102° F. for four or five days, coincident with the development of an attack of cystitis; after that the temperature again resumed its old course.

March 11, thirty days after the operation, she had several severe hemorrhages from the left kidney through the wound, losing about a pint or more of blood. Her strength gradually failed, and she died March 17, thirty-six days after the operation. No post-mortem could be obtained.

Remarks.—Two points deserve especial mention: First, the relative amounts of urine from the apparently useless and hopelessly diseased left kidney and the other kidney, and, second, the amount of urea excreted as an indication for or against nephrectomy.

First.—The most remarkable and interesting point about her history was the relative amounts of urine coming from the two kidneys. A comparatively small amount of the urine from the left kidney undoubtedly found its way into the bladder, but the major part of that which was thus voided came, of course, from the right kidney. It sank gradually to only five ounces within five days after the operation and the average for the three weeks after the operation was only 10.1 ounces a day. On the other hand, the dressings, pillow, and even the bed were wet by the profuse discharge, of which but little was pus, from the left kidney. Nine days after the operation, when the amount of urine from the bladder was ten ounces (double, therefore, the lowest amount), I measured, approximately, the amount from the left kidney in the following way. The dressings were weighed before they were applied, and as soon as they were removed wet they were weighed again, and it was thus determined that at this time the left kidney secreted forty-seven ounces of urine as against ten from the right. Yet the cortical substance of the left kidney looked so thin and wasted at the time of the operation that I scarcely thought it capable of secreting any appreciable amount of urine.

Second.—The normal percentage of urea is two and a half to three per cent., and the amount about five hundred grains. In this case the percentage never rose to two per cent., and at times was even less than one per cent. This led me to suspect that the other kidney was seriously diseased,—a suspicion verified by the subsequent examination of the vesical urine, even though an autopsy was not obtained. Had I removed this left kidney she would undoubtedly have died within two or three days from uræmia. My reason for not removing the other kidney was because of the small percentage of urea found before the operation. Dr. Stewart examined the urine from the bladder three days after the operation, and found the urea to be 1.6 per cent.; but as the amount of urine was only twelve ounces, the total amount thus excreted by the vesical urine was only eighty-six grains. We could not determine the amount in the urine from the fistula.

No nephrectomy ought to be undertaken, in my opinion, unless the percentage and the total amount of urea have been determined. If this percentage be below two per cent., nephrectomy should not be done until the kidneys have been stimulated to do their work, so that they eliminate at least this percentage of urea.

THE TREATMENT OF ANÆMIA BY COPPER AND ARSENIC.

By H. A. Hare, M.D.*

THE compound known as arsenite of copper has been so highly extolled as a remedy for all forms of diarrhœa, be their cause what it may, that there is danger of its being cast aside as a remedy which has been more praised than it deserves, or neglected because it is thought to be applicable to a very limited field of action. In reality, however, it is a drug which, in our opinion, has uses based upon both clinical and scientific evidence, and in anæmia promises to be one of the remedies which should always be tried, and considered as second only to iron or arsenious acid.

Many of the profession have come to think of copper solely in the form known as the sulphate, and as a drug used in some desperate cases as an emetic or antidote to phosphorus. Many years ago, however, Levi and Barduzzi found that small doses of copper, more especially of the sulphate, promoted assimilation and increased the strength and flesh of man and animals. Ringer has pointed out that it closely resembles arsenic, both physiologically and therapeutically, and Wackenroder asserts that it may be considered under certain conditions a normal constituent of the blood of

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man, while Millon states that copper, when found in the body under these conditions, is always attached to the red corpuscles. Further than this, the studies of a number of investigators, such as Brunton and Cash, have determined that double salts of copper act in small doses as a direct stimulant to the heart of the lower animals, and that the metal itself acts as a stimulant to the walls of the capillary blood-vessels. Brunton also asserts that small doses absorbed into the blood have a tonic effect on the nervous system, and this evidence is supported not only by the views of Levi and Barduzzi, already quoted, but by the, at one time, very general use of copper in one form or another, chiefly as the ammoniated copper, in cases of nervous debility, hysteria, chorea, and epilepsy.

Very much more recently, Pecholier and Saint-Pierre have noted that copper fed to animals increases the deposit of fat, and Liégeois has given copper to thirty patients in the form of aceto-phosphate of copper as recommended by Luton with the most encouraging results in anæmia and chlorosis.

Sufficient evidence, therefore, may be said to exist in regard to the tonic effect of this metal to enable us to expect that its employment in anæmia might be of service, and the well-known hæmatogenic power of arsenite of potassium or of arsenious acid would indicate that its combination with copper would give us a remedy for anæmia of very considerable value. Aside from the general experience of clinicians in regard to this action of arsenic, the readers of the THERAPEUTIC GAZETTE probably remember the papers on this subject by Dr. William Osler and by Mr. Barton, of London, whose cases the writer had an opportunity of seeing and examining while they were under treatment.

Without going into a consideration of all the causes of anæmia, we may recall the fact that this condition is really only a symptom of organic or functional disorder, and dependent upon a very great number of widely-different causes for its existence. We may also recall the fact that organic anæmia is practically an incurable condition, and that it is only the functional forms of the disease which afford us much opportunity of promoting a cure. It is in just such cases that arsenite of copper seems indicated, particularly if the gastro-intestinal canal is out of order. Sir Andrew Clark has already written upon the anæmia due to auto-intoxication from retained fæcal matter, and every practitioner sees cases of gastro-intestinal fermentation or catarrh in which anæmia is so marked a symptom that the question arises as to whether the anæmia has caused the digestive disturbance, or the digestive disturbance provoked the anæmia. After the digestive tube has been treated by the remedies ordinarily used to regulate its action, the arsenite of copper has an opportunity to perform a double duty. Acting as does arsenic as a stimulant to mucous membranes all over the body, in addition to its stimulant influence on nutrition, it tends to prevent disorders of the digestive mucous membrane, and so renders perfect secretion and absorption possible, preventing the auto-intoxication of the patient from the fermentation and decomposition changes in the contents of the stomach and bowel. Happily joined to this, the copper adds tone to the system, and promotes assimilation and the production of muscular tissue. To such an extent does this drug act as an alterative tonic that Luton has used the phosphate of copper as a remedy of peculiar virtue in scrofulosis and tuberculosis, so that we may consider the drug as one possessing a peculiar influence similar to that possessed by minute doses of bichloride of mercury.

Acting in the belief that arsenite of copper would form a useful combination in the treatment of anæmia and debility, the writer has tried it in a number of cases with very encouraging results. Under these circumstances the digestion improves, the color becomes more like the normal, and either by a direct effect on nutrition or on digestion, or on both, the patients progressed rapidly towards health, provided, of course, that the anæmia was functional and not organic in origin.

In the dose of $\frac{1}{50}$ or $\frac{1}{25}$ of a grain, arsenite of copper will, I think, often prove of service, if given three times a day after meals, and from its combination may prove to be superior to Fowler's solution not only in anæmia but also in chorea and similar nervous ailments.

CREOLIN-IODOFORM OINTMENT.

Creolin, 15 grains;
Iodoform, 30 grains;
Vaseline, 6 drachms.
Make into an ointment.

The advantage of this prescription is said to be that the smell of the iodoform is well masked.—*Les Nouveaux Remèdes*, September 24, 1891.

The Therapeutic Gazette

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Leading Articles.

PLEUROTOMY AND SIPHONAGE IN THE TREATMENT OF PYOTHORAX.

IT is abundantly proven that in preantiseptic times the simple evacuation of a serous pleuritic effusion was attended with such an appalling mortality that it was looked upon by many reputable physicians as an entirely unjustifiable operation. Thus Dupuytren, after but two successful cases in fifty operations, stated that his patients should die by the hand of God rather than from the interference of man. With the advent of modern methods thoracocentesis in cases of serous effusion has become a safe operation, and one which neither surgeon nor physician hesitates to perform when the indications of its necessity are present.

In cases of purulent effusion, however, aspiration, followed by immediate closure of the minute puncture, is, except in certain cases occurring in children, not sufficient. Here there must be permanent drainage; and, moreover, since many of these effusions are tubercular, and are not invaded by ordinary pus micro-organisms, rigid antisepsis is of paramount importance through the whole course of the case from the time the chest-wall is opened until the cavity left by the evacuated pus is completely filled in by expansion of the lung and the formation of healthy granulation tissue.

A means of providing constant drainage, of combining this with a suction action, and thereby encouraging expansion of the lungs, and of preventing the entrance of air and of its contained germs into the pleural cavity, is afforded by Bülan's method. This is practised as follows: A large trocar, provided with a canula, is thrust into the pleural cavity, and immediately on the withdrawal of the trocar a drainage-tube, five feet in length, which exactly fits the canula, is passed in as far as it will go, and is closed by a clamp placed on its free end. The canula is withdrawn, leaving the tube in place; the latter is clamped close to the chest-wall, the clamp on the end is taken off, and the canula is removed. The rubber tube is attached to a glass tube leading through a rubber cork and down to the bottom of a bottle half-filled with an antiseptic solution. This bottle should be provided with another opening through the cork, by means of which, should the drainage-tube become clogged by thick fibrinous masses, suction can be exerted.

About the point where the tube penetrates the chest-wall an antiseptic dressing must be applied, and it need scarcely be stated that every portion of this operation and of the after-treatment requires the most rigid observance of the rules of surgical cleanliness. The drainage-tube is kept in place by means of a rubber bandage passed around the chest. In this bandage a minute puncture is made; this is stretched till the drainage-tube passes through it. The contraction of this aperture on freeing its periphery from tension effectually holds the tube in place.

This method of treating pyothorax was at one time exceedingly popular, especially in France. The apparatus devised by Potain not only allowed of constant siphon action, but also enabled the surgeon to irrigate the chest cavity with mild antiseptic solutions. Within the last few years there has been a distinct revival of the favor with which this method was originally received.

Archavski (*Revue Médicale de la Suisse Rom.*, 11 An., No. 8) reports twenty-five cases, some complicated by pneumothorax,

treated by pleurotomy and siphonage. Of these, twenty cases were entirely cured, one recovered with a fistula, and four died. Three of the deaths were due to pneumothorax. The fourth perished in epileptiform convulsions occasioned by the introduction of a drainage-tube for the second time. Deaths in thoracic surgery from similar reflex phenomena are reported by others.

Statistics of this nature are, excepting that they prove the method of treatment efficient, of little value for purposes of comparison, since the nature of the empyema and the complications materially influence the prognosis under any treatment. Leyden has pointed out the importance of distinguishing between metapneumonic empyemas where the infection is by the pneumococcus, empyemas due to the presence of the staphylococcus, and those dependent upon the rupture of a tuberculous cavity, the latter representing the cases of greatest gravity.

Archavski firmly upholds pleurotomy combined with siphon-drainage as the most rational treatment for all purulent pleurisies, contending that it adds to the advantages of the antiseptic pleurotomy those of the siphon. The latter are of prime importance; by the suction action both liquid and fragments of false membrane are readily evacuated, and in cases of pneumothorax the air is drawn out; moreover, the lung is encouraged to expand. The pus is carried beyond the dressings, hence the skin about the wound is not subject to the irritation incident to a simple pleurotomy. The surgeon can immediately determine just how much has been secreted each day, and this without disturbing dressings.

Matas (Hare's "System of Therapeutics," vol. ii.) is inclined to agree with Immermann in his statement as to the application of siphon-drainage, which the latter author warmly commends in suitable cases. Immermann's conclusion is that this method is chiefly of service in recent cases, where the pus is not too thick to flow readily. It is particularly serviceable in double pyothorax, where it is important that bilateral fistulæ should not be formed. In the metapneumonic pleurisies and in those where there are many adhesions this method of treatment may be found impossible. Again, the amount of pus and the violence of septic symptoms may be such that it would be dangerous to wait for the slow evacuation accomplished by siphonage.

Of fifty-seven cases treated by pleurotomy and drainage, Immermann reports that forty-nine were cured.

Küster (cited by Matas) operated upon one hundred and nine cases by first opening the fourth interspace anteriorly and determining the location of the most dependent part of the cavity; here he resected one or more ribs, so that he had ready access to all parts of the suppurating surface. He cured fifty-two per cent. and lost nearly thirty per cent. This is in marked contrast with Archavski's and Immermann's number of cures, the percentage in the first author's cases being eighty; in the second, eighty-six.

FRIGHT AND CHLOROFORM ACCIDENTS.

THE reports of cases of death from fright and chloroform, which will be found in the current foreign journals, at least point a moral for anæsthetizers, for the relationship which exists between fright and cardiac failure is so well known and so generally recognized that any remarks calling attention to it are unnecessary. We are, however, quite confident that, oftentimes, serious symptoms and fatal results in anæsthetization depend as much upon disordered cardiac innervation as upon the effects of chloroform or other drug used for operative anæsthesia. Aside from the number of records of syncope and death from fright preceding operations in the pre-anæsthetic period of surgery, a still greater list exists in which the fatal result took place not at the end of a prolonged chloroformization, but after the first few inhalations of the drug, or, in other words, at a time when the nervous apparatus of the heart was so disturbed by mental emotions that only a few drops of a drug as powerful as chloroform were necessary to add the last straw to the load of the struggling organ. Again, this combined effect of fear and chloroform finds a still further aid in the reflex wave, which probably sweeps over the nervous system on the application of the surgeon's knife, for it is a well-authenticated fact that only advanced anæsthesia destroys the reflexes, and that almost the entire nervous system is free from the effect of the drug chloroform, except that portion which perceives pain. Thus Snow records the case of a child who submitted to a lithotomy, anæsthetized, but conscious enough to be amused by toys. Complete or semi-consciousness being preserved, the condition of fearful expectancy is emphasized by the actual touch

of the instrument to the diseased part, and the cardiac or respiratory disorder produced by the fear and the chloroform is deepened by the reflex impulse through sensitive nerves. We also know that irritation of a peripheral sensory nerve very greatly increases blood-pressure by a reflex influence on the vaso-motor system, and in this manner the work required of a heart, already weakened, is still more increased.

Further than this, according to a series of experiments performed by Dr. H. C. Wood and the writer of this article, the passage of concentrated chloroform vapor into the larnyx may produce considerable cardiac inhibition by reflex irritation of the vagus nerves which causes prolongation of diastole, or, in other words, increases dilatation of the ventricles. If the heart be fatty or otherwise diseased, all these influences are increased in severity, and McWilliams has shown that cardiac dilatation frequently ensues under chloroform. In addition to the clinical and experimental evidence, so far adduced, is the experience of all experimenters, in America at least, that strange dogs, which have just been brought to the laboratory and are much frightened, when prepared for anæsthesia, almost invariably die suddenly after chloroform is given, unless it is used gently, so that the passage from the normal state to that of complete insensibility is so gradual as to avoid alarm. When death occurs in these frightened animals, the heart is found to be widely dilated and engorged with blood. These facts certainly have a practical bearing, and indicate that the surgeon who resorts to chloroform should anæsthetize his patient very gradually if fear is expressed or is evident from the expression of the face or manner, and that the operation should not be begun until the circulation has recovered from the initial shock of fear and the drug, nor until consciousness is sufficiently impaired to prevent a second sensory and mental shock when the first incision is made in the skin.

THE DIAGNOSIS AND TREATMENT OF GLAUCOMA.

ONE of the most important recent communications upon this subject appears in the *Archives of Ophthalmology* for October, 1891. The paper opens with a discussion in regard to the differences between glaucoma and certain other forms of visual disturbance, which Von Graefe designated "amaurosis, accompanied by excavation of the optic papilla," and points out particularly that one condition alone—*e.g.*, the optic nerve affection—is not sufficient to warrant a diagnosis of glaucoma.

In trying to reach a diagnosis, the question of *intraocular pressure* at first presents itself most forcibly to the mind of the ophthalmic surgeon. Ordinarily abnormal tension is diagnosticated by palpation with the skilled finger; but, as Schweigger points out, even after the hardness of two eyes is compared, it is frequently difficult to decide whether there is increased tension or not; and surely we may believe with this observer that the degrees of increased intraocular tension will differ widely when tested by independent examiners. Indeed, this is perfectly true when the examination is made with the tonometer and even with manometric measurements. In the opinion of Schweigger, the intraocular resistance should be studied after the manner of Coccius,—namely, by pressure directly upon the sclera, and not through the lids. He further believes that patients who make this examination difficult by spasmodically squeezing their lids together will do this just as much when the touch is made through the closed eyelids.

We are accustomed to speak of "*a typical excavation*" in glaucoma, but it at once becomes difficult to describe this. Schweigger defines a physiological cupping of the optic disc to be one that includes more than one-third of the disc's surface, and whose floor is formed by the lamina cribrosa. He further points out that physiological excavations are almost invariably bilateral, although they may differ in their breadth and depth on individual sides; hence, in suspected glaucoma, if there is bilateral excavation, it is hard to decide which one is physiological, and which one is pathological. It is only when we find on one side a marked excavation, while the disc on the other side is flat, that we can with certainty declare that the excavated papilla has been hollowed out under the influence of glaucoma.

Iridescent vision, or that misty vision associated with the appearance of halos around artificial lights, which has been looked upon as diagnostic of glaucoma, must not be regarded in any sense as pathognomonic of the disease. Even in cases of conjunctivitis halo-vision may arise, owing to the spreading of a thin layer of mucus over the surface of

the cornea, and Schweigger points out that in mild iritis, with slight deterioration of vision, the same phenomena are observable, if the sound eye is covered, and the patient required to look at a lamp which has been turned down low.

This author thinks there is nothing characteristic about the *corneal opacity* so commonly seen in glaucoma, because precisely the same condition arises in iritis and irido-choroiditis.

Neither can the *pupil* be relied upon with certainty, because glaucoma may progress to complete loss of sight, without positive interference with the mobility of the iris, and in cases of unilateral blindness from glaucoma, although the direct reaction fails, the convergent-consensual contraction remains. Schweigger states that it rarely happens that the pupil is enlarged and at the same time perfectly round and movable in glaucoma, and although a fixed pupil, and one which is widely dilated, indicate that an eye has been the subject of severe attacks of increased tension, the presence of an inactive pupil does not necessarily imply glaucoma. Indeed, Schweigger states that he has seen atrophic degeneration of the optic nerve diagnosticated as glaucoma, when it really was due to disease of the nerve-centres with immobility of the iris.

Shallowness of the anterior chamber may be produced by intraocular pressure, accompanied by inflammatory symptoms due to enlargement of the vitreous body, and hence the sign, as far as glaucoma is concerned, is of small diagnostic value.

Pathological *arterial pulsation* is not a sufficiently certain sign to warrant as much importance as has sometimes been attached to it, and cannot alone be considered sufficient evidence to warrant the diagnosis of increased tension.

While the most important alteration that accompanies glaucoma is that which the optic nerve suffers, as Schweigger declares, there is but one way in which a correct estimate of the clinical meaning of this symptom can be reached, and that is by comparing it with an earlier picture of the papilla. He believes that glaucoma may proceed to total blindness without the formation of an excavation, and quotes a case in point. Touching the question of excavations, the following sentence is italicized in his paper: "The ophthalmoscopic picture of a physiological cup may be produced by glaucoma, and normal excavations with discoloration of the disk cannot be distinguished from excavations due to intraocular pressure."

He also considers the so-called *halo-glaucomatosis* of imperfect diagnostic value. It is due to an atrophy of the choroidal circle which surrounds the nerve-head. It may be absent about pressure-excavations, and may be present when there is no glaucoma. Referring again to the question of glaucomatous excavations, it is safe to say that inasmuch as the larger physiological cups are always bilateral, a complete deep, one-sided excavation is certainly the result of increased intraocular pressure.

It would not be possible in the limits of this review to take up the other propositions which Schweigger brings forth touching the etiology of glaucoma, and the comparison between cases which have been diagnosticated as glaucoma simplex, and those which really should be classified with various types of amaurosis, but we may once more quote from this author a sentence which is of paramount importance, —namely, that "the only road to success in diagnosis lies in continued observation."

We come now to the important *therapeutic* points of Schweigger's paper. First of all, he believes that as soon as the existence of glaucoma has been demonstrated by exclusion of cases which resemble it, by careful examination of all the symptoms, by teaching patients to observe their own condition, and by practising what he has so aptly called "continued observation," there is only one thing to do to prevent impending blindness, and that is to perform an iridectomy at the earliest opportunity. He thinks that although temporizing with eserine may be justifiable, it is really, in the most instances, time lost. Sometimes it may be needful to excise only the sphincter of the iris, but an operation should be performed. The well-known fact that iridectomy is more effectual in marked inflammatory cases, than in those which do not present this condition, is reiterated. Although we know that in those cases in which the visual field is so contracted that it approaches close to the fixation point, the ultimate result of the operation becomes doubtful, Schweigger asserts that he has operated on cases of glaucoma having a small visual fluid, but with good central acuteness of vision, and that after the iridectomy there has been no further loss of visual power. Under these circumstances it is important to distinguish between cases of optic nerve atrophy with excavation, and glaucomatous excavation. In the former we deal with a progressive disease which is uninfluenced by the operation; in the latter, with an affection that

may be stayed by this surgical procedure. Sometimes glaucomatous symptoms present even after a well-performed iridectomy, and impairment of vision cannot always be checked by renewed iridectomies or sclerotomies.

The term malignant glaucoma, according to Schweigger, is reserved for those cases which do not exhibit a normal course after the operation, and he analyzes a number of cases in this connection. The following conclusions are of great importance, coming from an operator of such vast experience:

"When a malignant glaucoma attacks one eye, it follows iridectomy on the other eye, even when the second eye is not affected for years after the first.

"Experience teaches us that in all cases of chronic glaucoma affecting both eyes, it is advisable to operate first of all upon the worst one, even if it be absolutely blind. Should this be followed by the normal healing process, the second eye may be operated upon without the least apprehension."

Finally, he considers malignant glaucoma of rare occurrence, and asserts that a favorable result may be expected from an iridectomy, while sclerotomy is by no means an infallible remedy; hence there is no excuse for preferring sclerotomy to iridectomy. A number of examples are quoted in support of this opinion.

Pursuing this subject still farther, he observes that attacks of glaucoma do not occur after iridectomy, as he has seen them set in after sclerotomy. Independently of malignant glaucoma, blindness from glaucoma in which an iridectomy has been done, is uncommon, but in his experience the insufficiency of sclerotomy in this disease has been abundantly confirmed, and he does not depend upon it in cases of true glaucoma.

Touching the question of hydrophthalmos, Schweigger states that he has repeatedly performed iridectomy in children thus affected, and has not experienced the dangers which are ordinarily supposed to attach to this procedure. He insists, however, that the incision should not be too peripheral, but should lie along the corneal border of the limbus, and thinks that, as in glaucoma, so also in hydrophthalmos, the only remedy that will prevent blindness is in iridectomy made as early as possible.*

Finally, we come to Schweigger's opinion in regard to hemorrhagic glaucoma, and read with some interest that he thinks that iridectomy in this disease has acquired an undeservedly bad reputation. This he states in spite of the fact that he has observed cases in which iridectomy did no good, although in others an operation preserved to the patient some visual acuity. He quotes six cases in which the iridectomy wound healed readily, and states that in these cases the pain was relieved, and whatever remained of sight was preserved, concluding that when vision is still present in a case of hemorrhagic glaucoma, it can be maintained by means of iridectomy. This advice is not in accord with the experience of all ophthalmic surgeons, and many will still believe that, so far as iridectomy is concerned, hemorrhagic glaucoma remains a *noli me tangere.*

These quotations are made from a paper of one of the greatest of living ophthalmic surgeons, and while Professor Schweigger's experience may not entirely coincide with that of every one, it furnishes much food for thought, especially in the importance of endeavoring to differentiate between cases of so-called simple glaucoma and cases which Von Graefe designated as amaurosis accompanied by excavation of the optic papilla. All the well-known signs must be carefully sifted; one alone is not sufficient to lead to a diagnosis. When, however, a diagnosis is made by such conscientious study, and by what Schweigger has called "continued observation," then, at the earliest moment possible, the immortal discovery of Von Graefe comes into play,—namely, iridectomy.

* In this connection it is interesting to consult the article of Theodor Arnold, which is abstracted in the Progress column, page 62.

THE TOXIC PROPERTIES OF TOBACCO.

TOBACCO is so rarely used as a medicine and so commonly as a luxury that we are apt to overlook its active toxic properties by reason of our familiarity with the drug. Half a century ago physicians used it quite frequently as a local application in pruritus ani and vulvæ, and even for the purpose of killing parasites of the scalp. In other cases it was used in large enough doses to produce sufficient muscular relaxation to permit of the reduction of luxations or fractures, and the employment of the drug in this way brought forward the toxic power of the remedy so forcibly as to prevent its general employment. Husemann states that no less than ten deaths have occurred from tobacco

enemata used for the removal of seat-worms or other purposes, and in the *American Journal of the Medical Sciences* for January, 1847, will be found the report of a case where a man attempted to relieve himself from a bad attack of piles by sitting on a chamber in which was placed some burning tobacco. In a few moments he fell to the floor unconscious and apparently lifeless.

A very large number of similar instances could be given where tobacco employed for medicinal purposes has acted unfavorably, but our object in this editorial is to call attention to several cases which have been recently reported.

In the *Virginia Medical Monthly* for November, 1891, Dr. W. Carroll Chapman records a number of cases in which children of from 10 to 12 years suffered from symptoms of severe poisoning while engaged in carrying tobacco from reservoirs in which it was steamed to manipulators who did the stemming. The symptoms consisted in shallow, gasping respirations, with severe abdominal or umbilical pain, and an irregular, wiry pulse, accompanied by marked emaciation. In one case, occurring in a girl, death ensued on the fifth day, being preceded by a fluttering pulse and gasping respiration, the immediate cause of death being asphyxia.

It is evident that in these cases the steaming process set free the volatile alkaloid nicotine in addition to the other compounds which are known to exist in the tobacco plant or are developed from it by heat, and which are equally poisonous with the alkaloid.

In addition to the cases reported by Chapman, a case of poisoning has recently occurred in Camden, N. J., in which instance a child of 2 years sucked an old pipe belonging to its father and died in a few hours.

The question of interest in these cases is whether the nicotine was solely responsible for the effects produced. There is little doubt that it was not, for Le Bon found prussic acid, and Vohl, Eulenberg, and Zulinski have separated pyridine, picoline, lutidine, parvoline, corodine, rubidine, and viridine, in addition to carbonic acid and marsh-gas from tobacco-smoke. Krause states that cyanogen is also present. Unfortunately, we have no knowledge of the separate physiological activities of most of these compounds, but they have been found active when deprived of the nicotine, causing collectively contraction of the pupil, dyspnœa, general convulsions, and death. Pyridine is the only one of the group which has been studied alone. In small amounts it has been found to act as a stimulant to the circulation, respiration, and motor nerves (Harnach, Meyer, and De Renzi), and in large quantities as a respiratory paralyzant and depressor of the spinal cord and respiratory centre (Bochfontaine and Sée).

It may not be out of place to point out that tobacco does not contain a second alkaloid or active principle,—nicotianin,—as has been thought by some writers.

Reports on Therapeutic Progress.

TREATMENT OF SORE THROAT.

It is now generally admitted and agreed that in diphtheria some form of antiseptic or at least aseptic treatment should be used, but for the simpler forms of throat inflammation, and the catarrhal as well as tonsillar troubles, which are supposed to be caused by cold, the treatment remains for certain doctors what it was,—that is, chlorate of potassium or other gargles of an emollient or astringent nature,—and yet the simple fact that these troubles are frequently seen in the same family, and at the same time as diphtheritic diseases, would seem to indicate a common origin. The infectious nature of tonsillitis and other simple forms of throat and bronchial disease or inflammation seems likely, and once this is suspected, if not proved, it should lead to trying antiseptic methods instead of the old astringents. The following is a formula much used in France:

℞ Acid. carbol., cryst.,
Camphor, āā gr. xv;
Glycerini,
Aquæ destill., āā f℥ii;

This is painted on the inflamed part three times a day. It will be found to have a mechanical action as well as an antiseptic one. —*Archives of Pediatrics*, December, 1891.

ACTION OF ICHTHYOL.

In the *Gazette Hebdomadaire des Sciences Médicale de Bordeaux*, it is stated that ichthyol proved itself very useful in the treatment of an intense and rebellious pleurodynia when rubbed into the part affected in the proportion of 20 parts to 100 of vaseline. The pain diminished at once and the cure was complete in forty-eight hours. Similarly good results

were obtained in a case of stiffness from an injury to the shoulder-joint, combining the use of the ichthyol with massage. Ichthyol was also used internally in pills, in the dose of 1 to 3 grains, with good effect in several cases suffering from boils.—*Revue Internationale de Bibliographie Médicale*, September, 1891.

ABRIN AND RICIN.

The numerous points of resemblance in respect to physiological action between abrin, the poisonous albumose to which the inflammatory action of preparations of jequirity seeds upon the eye is attributed, and ricin, the albumose of castor-oil seeds, has suggested the probability of their being identical. Both possess the property of coagulating the blood in a peculiar manner, giving rise to numerous thromboses, especially in the intestinal vessels; they also affect similarly the mucous membrane of the eye, and they are both converted into non-poisonous substances by digestive ferments. Experiments by Ehrlich have shown, however, that they are quite distinct substances. One peculiar action of abrin is to cause a loss of hair growing around the point of injection. In toxic properties ricin was found to be about twice as powerful as abrin, but in their action on the membrane of the eye this relation is reversed. Further, it was found possible by special treatment to render an animal immune against abrin or against ricin, but the immunity against one of these albumoses does not involve immunity against the other. The practical inference drawn by Ehrlich from the results of his experiments is that by the use at first of dilute solutions of abrin and ricin, and then carefully and slowly increasing the strength, all danger to the eye in using these substances may be avoided, without diminishing the healing effect.—*Pharmaceutical Journal and Transactions*, November, 1891.

DEATH ON THE THIRD DAY FROM THIRTY GRAINS OF POTASSIUM IODIDE.

Cases of the character reported by ELSNER in the *Australian Medical Journal* for August 15, 1891, are, fortunately, so unusual that the following is of interest. A woman, aged 49 years, was admitted to the Alfred Hospital on July 22, 1891, with the following history:

On the 15th of July she consulted a physician in a neighboring suburb for a "cold," and was ordered thirty grains of potassium iodide, together with two drachms of potassium acetate, in an eight-ounce mixture, to be given in eight doses (*i.e.*, less than four grains every six hours), which she finished and had repeated; she had hardly taken one dose of the new mixture, when the backs of her hands and her face broke out in a multiform eruption, the eyes rapidly closing up. A second consultation took place on the 19th, the iodide was stopped, another medicine (potassium chlorate) substituted, and an ointment of vaseline ordered for the eyes. Her condition not improving, and large bullæ having appeared on the hands, she was admitted to the hospital on the 22d. Her condition then was most pitiable; the face was enormously enlarged and unrecognizable, the eyelids so swollen that they could not be drawn asunder without great difficulty and pain; vesicles, blebs, and bullæ in every stage covered the skin of the face and the backs of the hands and forearms as far as the olecranon, whilst on the cheeks and temples were ridges of white, waxy skin, forming bossy wheals, tubers, and hard, indescribable welts. None of the blisters had broken, except some near the eyes. In the course of the following twenty-four hours, some of the larger bullæ filled up with blood, the vesicles with pus, whilst the sites of former ruptures on the face oozed blood. The peculiar situation of the bullæ on the hands and the intense coryza led to the suspicion of iodide exanthema and iodism, and the prescription being sent next day, verified the diagnosis. Hemorrhages were found on the scalp on the hair being cut. At night the patient vomited, and also passed blood per rectum, and it seemed as though she could not last the night through. On the morning of the 23d, however, she was a trifle better, the temperature normal, but the pulse 120, running and compressible. She was ordered the iron mixture of the hospital (15 minims of tincture of iron per dose), a lotion and powder of boric acid, hypodermics of ergotine to be repeated frequently, and bathing with decoction of bran.

The patient's extreme prostration, pain, and misery combined rendered local treatment almost an impossibility, whilst the acute (almost "pernicious") anæmia and vomiting precluded the administration of arsenic, had it seemed fit to give it. The tongue was brown and dry, the teeth covered with sordes, the breath foul, and but little alteration took

place in the unfortunate patient's condition in spite of all that could be done.

On the 24th the patient had passed a somewhat easier night, not being so often disturbed in her sleep by the bloody motions, which she was, up till then, unable to control, and which passed in the bed whenever she coughed or moved. Sucking ice allayed the vomiting somewhat, but through the following night she got worse and worse, and died about 10 A.M. on the 25th. The feet were œdematous, but without eruption of any kind, the hemorrhages being confined to the hands, the face, and the scalp, whilst one flat tuber, with a bloody patch in the centre, formed on the palmar surface of the right hand,—the only exception to the rule of dorsal eruptions ever noticed.

Post mortem.—The skin all over the body was found blanched; the blisters with their bases "cupped," but almost bloodless; the stomach and intestines were anæmic; whilst here and there were scattered distinctly-injected vessels underneath the mucosa. On the posterior wall of the cardiac end of the stomach was a punched-out ulcer, circular and non-perforating, but extending down to the peritoneum and destroying the continuity of several blood-vessels, the open end of an artery gaping near the centre of the lesion, which was about the size of a three-penny piece, being apparently the source of the fatal hemorrhage. This ulcer was evidently of recent origin; its outer peritoneal surface was slightly indurated, and there was no attempt at repair; there was no further trace of ulceration in the abdominal viscera. The heart showed evidences of ulcerative endocarditis, with recent vegetations on the aortic valves. With these exceptions, there was no other macroscopic change found in the organs which might have explained the fulminancy of this case.

THE THERAPEUTICS OF STRONTIUM.

In the *Bulletin Générale de Thérapeutique*, No. 44, 1891, EGASSE states that the salts of strontium were first employed therapeutically by Hassan, who recorded his results in a thesis which was inspired by Vulpian. In this thesis Hassan insisted upon the advantages which are obtained by the nitrate of strontium in the treatment of chronic rheumatism. Under these circumstances the swelling of the articulations rapidly decreased, the local temperature was moderated, and all phenomena caused by the drug were favorable. Full doses of this substance were also found to augment the activity of the kidneys and to increase the elimination of urea in the urine. Egasse proposes the following formula for the administration of the lactate of strontium in cases of albuminuria:

℞ Lactate of strontium, ℥iss;
Distilled water, ℥xii.

A dessertspoonful of this solution is to be given night and morning, or, instead of this, lactate of strontium, one ounce; syrup of bitter orange-peel, ten ounces; a dessertspoonful twice or thrice a day. The bromide of strontium may be given in distilled water.

In *Les Nouveaux Remèdes* for November 24, 1891, DUJARDIN-BEAUMETZ publishes a paper read before the Société de Thérapeutique de Paris upon the use of the lactate of strontium in albuminuria. After pointing out the fact that the substance is not at all toxic, and after quoting the experiments of Laborde (THERAPEUTIC GAZETTE, February, 1891), he speaks of five cases of albuminuria in his service the causes of which were widely diverse, and in which he used strontium lactate. Thus, one was a case of Bright's disease and the others were dependent upon cardiac lesions. In all the cases, without dieting, in from one to four days' time there was a diminution in the albumen by at least one-half. The results were most surprising, for we have been accustomed to deem the diet of the greatest importance and the quantity of albumen passed of much moment. Then, too, in these cases the disorder of digestion results in the formation of toxic substances which the kidneys fail to eliminate. For these reasons we have been accustomed to order a vegetable diet for these patients, and to insure intestinal antisepsis by the use of remedies intended for such purposes, at the same time increasing the eliminative processes by the use of purgatives, diuretics, and sudorifics. We can, however, explain the action of strontium by remembering that it favors digestion, as has been proven by Sée, and so decreases the formation of toxines to the minimum.

In regard to the administration of strontium lactate, Dujardin-Beaumetz follows the method of Paul. A solution of two ounces is made with half a pint of water, and of this solution a dessertspoonful is taken morning and night. Finally, Beaumetz thinks that in strontium we have a most valuable remedy which is entirely harmless yet effective. Care should, of course, be taken that a pure salt is obtained.

THE TREATMENT OF WHOOPING-COUGH.

According to the *Bulletin Générale de Thérapeutique*, GALVAGNO has employed antipyrin combined with resorcin in the following formulæ in the treatment of whooping-cough in children:

℞ Distilled water, f℥iiiss;
Resorcin,
Antipyrin, āā gr. xv;
Hydrochloric acid, gtt. x;
Syrup, f℥i.

Or,

℞ Syrup of acacia, f℥iiiss;
Resorcin,
Antipyrin, āā gr. xv;
Syrup, f℥i.

Sig.—Of this, 3 to 5 dessertspoonfuls are given each day.

Under this treatment the duration of the disease, according to the author, does not exceed twelve days.

ANTIPYRIN FOR URINARY INCONTINENCE.

GAUDET, in a Paris thesis, states that he has obtained excellent results from the administration of antipyrin in cases of incontinence of urine in children. He administers it by the mouth, in capsules or dissolved in Vichy water. The dose given is from 20 grains to 1 drachm a day, and it is to be administered at two-hour intervals at first, and afterwards at six- or eight-hour intervals.

[This is certainly an unsafe dose for a child, if not for an adult.—ED.]

HAND DISINFECTION.

DR. H. A. KELLY, after giving the details of a large number of experiments made by himself and his associates as to this most important ante-operative procedure, reaches the following conclusions as to the best method to be employed:

1. Scrubbing the hands, with especial attention to the nails,—not more than one millimetre in length,—for ten minutes in water, frequently changed, at about 40° C. (104° F.).

2. Immersion of the hands in a solution of permanganate of potassium, made by adding an excess of the salt to boiling distilled water,* until every part of the hands and lower forearms is stained a deep mahogany red or almost black color. They are then transferred at once to a saturated solution of oxalic acid until completely decolorized and of a healthy pink color. This decolorization is accompanied by a sense of warmth, due to chemical reaction, and a sharp stinging wherever there is any abrasion of the epidermis.

3. Washing off the oxalic acid in warm sterilized water.

By this simple process the hands are rendered more nearly absolutely aseptic than by any other known means.

In fifty experiments after disinfection by this method, forty-four remained without growth; the remaining six yielded respectively eighty, twenty, ten, nine, five, four colonies,—an enormous quantitative difference in favor of permanganate of potassium and oxalic acid as contrasted with soap-and-water and corrosive sublimate.

In conclusion, Kelly recapitulates the gist of this most important matter as follows:

I. Staphylococci (mostly albus) were present on the hands of all persons examined.

II. It is impossible to get rid of these staphylococci by scrubbing the hands and nails from ten to twenty-five minutes with a sterilized brush, soap, and water, temperature 40° C. (104° F.).

a. Demonstrated by countless colonies developed in one hundred per cent. of cases examined,—nurses and doctors whose hands were infrequently or not at all immersed in bichloride solutions.

III. The bichloride of mercury solutions as used, up to 1 : 500, are not germicidal, as supposed.

a. Previous erroneous conclusions as to the efficiency of the bichloride are shown to be due to an inhibiting action which may persist at least twenty-four hours after the last use of the drug.

b. Precipitation of the bichloride on the fingers with a sterile ammonium hydrosulphuret solution yields numerous colonies, after complete failure to develop before precipitating.

c. This statement holds good also of Fürbringer's method, which failed to show germicidal properties.

d. Hydrogen peroxide and lysol (four per cent.) were tested and found wanting.

IV. The germicidal properties of a saturated solution of potassium permanganate, followed by its neutralization in a saturated solution of oxalic acid, is supported by—

a. A large number of experiments in which no colonies at all developed, immediately

* Cold water takes up from four to five per cent., boiling water twenty-five per cent.; the excess is redeposited on cooling.

after the demonstration of countless colonies after soap and water.

b. In the low percentage of cases in which germs developed the number of colonies was small and definite.

In the present state of our bacteriological knowledge as to the causes of inflammation and suppuration, we are bound to use every means in our power to avoid sowing any unnecessary germs in our wounds. Soap and water are, Kelly believes, the best disinfectants, if we use but one, for they remove all germs which will come away easily. The bichloride of mercury, although dangerous on wounds on account of its property of coagulating and causing necrosis of albuminous tissues, has the valuable property of inhibiting those germs with which it comes into contact. Permanganate of potassium and oxalic acid are harmless to the hands and are germicidal. Soap and water plus the permanganate of potassium and oxalic acid are the only true germicides, and therefore the best disinfectants we possess to-day.—*American Journal of Obstetrics*, December, 1891.

HYDRASTIS CANADENSIS IN OBSTETRIC PRACTICE.

Bossi, in a paper read before the Medical Academy of Genoa, July 1, 1891, reaches the following conclusions as the result of numerous trials in the obstetric clinic:

1. Fluid extract of hydrastis canadensis, in doses of 100 or 200 drops a day, exercises no injurious influence upon either the mother or the child at any period of pregnancy. The same is true during the puerperium.

2. When used during pregnancy, labor, or the puerperium, hydrastis shows a constant hæmostatic and prophylactic effect upon the uterus, without in any way exerting an ecbolic or disquieting influence upon the uterus.

3. It acts more powerfully than ergot, and is free from the after-effects of the latter, so that it can be used without fear as a curative and prophylactic remedy in metrorrhagias occurring at any period of pregnancy, labor, or the puerperium. It may, therefore, be intrusted to midwives in the country in preference to ergot.

Hydrastis is indicated (1) in losses of blood occurring in pregnancy and in the puerperium, the general dose being from 100 to 150 drops a day; (2) as a remedy administered after the child is born, in doses of 150 to 200 drops daily, 50 to 60 drops being given at a dose; (3) and in the preliminary stage of labor in cases of placenta prævia; (4) it is also indicated in the period of dilatation; and (5) as a prophylactic remedy against post-partum hemorrhages, uterine weakness, great development of the fœtus and of the adnexa, anæmia of children, and in those cases in which there is disposition to hemorrhages. —*Zeitschrift für Therapie*, October 1, 1891.

EFFECT OF RECTAL INJECTIONS OF WATER UPON THE SECRETION AND THE COMPOSITION OF BILE.

Stadelmann's paper in the *Therapeutische Monatshefte*, November, 1891, is based upon the experimental work of Drs. Nissen, Müller, Loewenton, and Dombrowski. The dog was the animal used in the experiments. Dr. Loewenton found the following variations in the normal secretion of bile:

	Maximum.	Minimum.
Quantity of bile in cubic centimetres	114.0	79.0
Bile pigment in milligrammes.....	78.0	48.9
Bile acids in grammes.....	4.43	2.19

The average quantities estimated by Loewenton from his normal experiments are, for twelve hours, 91 cubic centimetres of bile, with 67.58 milligrammes of pigment, and 2.745 grammes of bile acids. Dombrowski's figures are a little higher, being 101.5 cubic centimetres for twelve hours, but his figures for pigment and bile acids agree pretty closely with those of Loewenton.

Two series of experiments with rectal injections of water were performed. In the first, water was introduced into the rectum with the idea that as large a quantity as possible should be absorbed; hence smaller quantities at a time were allowed to flow in. In the second, irritation of the bowel and a reflex effect of the water upon the liver were to be tested, and hence cold water was chosen. The results of these experiments are presented in the form of tables.

As is well known, these injections of cold water have been recommended by Krull and Mosler for the treatment of catarrhal jaundice. According to the former, one or two quarts of water of a temperature of 54° F., or, when frequently repeated, of a temperature of 64° F., are injected once a day, the patient retaining the water as long as possible. No cholagogue action from this procedure has been noted by Stadelmann. Whether much or little water is injected, and whether it be cold or warm, the secretion of bile is raised little or not at all above

the physiological limits. In short, the result is a negative one. "Only he who maintains the existence of a completely uniform, regular, normal secretion of bile, and who does not believe in the existence of marked physiological variations, can, from these tables, discover a cholagogue action from rectal injections of water."

The result, according to Stadelmann, was the same when cold water, at a temperature of 59° or 66° F., was employed. In one experiment the secretion of bile amounted to one hundred and twenty-eight cubic centimetres, but this amount, Stadelmann says, exceeds the physiological maximum by only fourteen cubic centimetres, and, moreover, in the experiment in question, the secretion was greatest at first and diminished subsequently, and larger infusions gave a negative result. The quantity of bile secreted is independent of the quantity of water injected. The chief action of the cold water is reflex, and as there is considerable testimony to the efficacy of the injections in jaundice, they must do good in this way. Krull explains their good effect by saying that they strengthen the peristaltic movements of the bowel and exercise a harmless irritation upon the bile-ducts and so overcome the obstruction to the outpouring of the bile. In addition, there is also an effect upon the circulation of the blood in the intestine and liver. Stadelmann is inclined to attribute a part of the favorable action to the removal of irritating decomposed masses, and therefore to a purifying and disinfecting action.

Stadelmann expresses the wish that Krull's injections, carefully employed, might receive greater attention as a therapeutic measure. His own experience is in favor of beginning with smaller quantities of water at a higher temperature (65° to 68° F.), and increasing the quantity subsequently, at the same time lowering the temperature. One injection a day is sufficient. He thinks it superfluous to medicate the water, and it may even be injurious.

HEPATIC SYPHILIS IN CHILDREN.

DR. CHAUFFARD in a recent clinic on the above subject gave a very clear idea of the important differences that exist between this disease in children and adults. He said, "It has been often said that infantile pathology did not constitute a clearly-defined specialty, and while it may be true that a certain number of diseases have points in common both in adults and infants, still, a very large number of maladies are entirely different in infants, and have special and separate characters distinct from the same trouble in adults. Syphilis of the liver is one of these, and the principal differences may be classed under two heads. 1. The difference in etiology. 2. The pathogenesis. As to the first, liver syphilis is in the adult an acquired disease. It is true that an infant may get syphilis, but if it should do so, it would not go to the liver, so it may be said that, in the child, hepatic syphilis is always hereditary. Next, as to the pathogenic differences. An adult gets his hepatic syphilis just as he would cerebral or any other syphilis. That is to say, that the syphilitic germs attack the liver or any other viscera by the arterial route. It is in fact a *processus endoarteritis*, and the disease is propagated or carried by the hepatic artery in this case. But it is entirely different in the infant. If you will call to mind your anatomy of the fœtal circulation, you will remember that the mother's blood comes by the umbilical vein directly into the liver, carrying from the placenta the nutritive principles furnished by the mother, and most likely with them the germs of the disease. This is why hepatic syphilis in the infant is so diffused and massive in its character.

"It is not at all the same in the adult. A woman who had entered with syphilis in her fourth month of pregnancy, had been put under specific treatment at once, and when the baby was born it looked well, but after two months it was found to have an immense liver that was hard and painful; mercurial inunctions of three grammes a day were given, and the child took by the skin three hundred grammes of mercurial ointment, or one hundred and fifty grammes of metallic mercury, in three months. This proves the wonderful tolerance that children have for this drug, as it neither got stomatitis nor eczema during the treatment. When born it weighed three thousand grammes (six French pounds), and six months afterwards it weighed six thousand five hundred grammes, so that, notwithstanding the treatment, it followed the well-known rule in healthy infants, which says that 'they should increase double their weight in six months.' The pathological anatomy of hepatic syphilis in children and adults is also quite different, for in the child the liver is found so hard and elastic that it is called '*silex liver*,' and it has very small gummata diffused all over its surface, making these lesions quite uniform in character. In the

adult the syphilitic liver is extremely deformed, '*tied up*' it is called, and large irregular gummatous tumors bulge out in its substance."

Dr. Chauffard recommends in infants of this sort to give them a prolonged treatment of mercurial ointment in doses of at least 30 to 45 grains per day, with 3 to 8 grains of potassium iodide, and to continue this treatment without interruption for months. In adults more care must be taken with larger doses, ½ to 1 drachm of ointment, with 4 to 5 grains of potassium iodide, but the mouth must be watched for the symptoms of stomatitis, which is rare in infants.—*Archives of Pediatrics*, December, 1891.

GUAIACOL AND IODOFORM IN CONSUMPTION.

At the meeting of the Therapeutic Section of the British Medical Association, held at Bournemouth, Robertson, of Ventnor, read a paper on this subject, and reached the following conclusions from his cases :

1. That in empyema with free drainage the treatment does good in improving the general condition and in diminishing the discharge from the pleural cavity, but that without free drainage it is of uncertain value.

2. That in pyrexial phthisis, whether the disease is small in extent or so extensive that the case seems almost hopeless, this method is not an absolutely certain antipyretic, but it is commonly of decided advantage if persevered with in reducing the fever, and by so doing in diminishing the activity of the disease.

3. That even where it fails within a reasonable time to modify the fever, it is still serviceable in most cases in diminishing expectoration and in modifying the cough.

4. Though it is serviceable in limiting waste by reducing temperature and by diminishing expectoration, it cannot be said that this treatment is specially favorable to increase in body-weight.

5. The treatment is without risk with ordinary precaution.

6. Its use does not prevent the development of other tuberculous outbreaks or extensions of tuberculous mischief, for tuberculous meningitis, pleurisy, hæmoptysis, pneumothorax have been shown to occur after many injections.

7. In interpreting the mode of action of these remedies, their antiparasitic action should not exclusively be thought of. It should not be forgotten that both remedies act, even in small doses, upon the patient himself ; that so long ago as 1867, Headland, in his "Action of Medicines," described creosote as a sedative, a stimulant of mucous membranes, and as a true astringent.—*British Medical Journal*, November 14, 1891.

DOG'S SERUM IN THE TREATMENT OF CONSUMPTION.

The constant employment of the blood serum of various animals by physiologists, pathologists, and clinicians in the treatment of tuberculosis renders the summary given by Beretta, of Paris, in the *British Medical Journal* of November 14, 1891, very interesting to those who are not fully aware of the progress of this process.

It is well known that the staphylococcus pyosepticus causes fatal septicæmia when injected into a rabbit, and only local suppuration when injected into a dog. Professor Richet and Dr. Héricourt, as far back as 1888, succeeded, by injecting a small quantity of dog's blood into the peritoneal cavity of a rabbit, in rendering this animal also refractory to the action of the same microbe. They noticed, besides, that the experimental immunity of the rabbit was still more marked when the injected blood belonged to a dog which had previously been inoculated with the staphylococcus. It was natural that the same method should be tried with other microbes, particularly with the bacillus of tuberculosis to which the rabbit is so liable, while the dog is manifestly refractory to it. The principal results successively announced by MM. Richet and Héricourt to the French Academy of Sciences and to the Paris Society of Biology may be summarized as follows :

First.—A rabbit having been inoculated with a culture of the tubercle bacillus, the evolution of tuberculosis can be arrested by injecting dog's blood afterwards when the bacillus culture is not too virulent, but this evolution is only delayed when the culture is very virulent.

Secondly.—The effective substances of the blood, which have not yet been identified, reside in the serum, and a small dose of the latter is sufficient (one-half cubic centimetre per kilogramme of the rabbit).

Thirdly.—The serum of dog's blood has a prophylactic action,—that is to say, when injected into a healthy rabbit it prevents the development of experimental tuberculosis at a later period.

Fourthly.—The serum of a dog which has been previously inoculated with tuberculosis seems to be more efficacious in a healthy rabbit, but, on the contrary, seems to aggravate the disease when injected into a rabbit already tuberculized.

The results encouraged several physicians to try the dog's serum—called also hæmocyne—upon human beings, of course with all requisite precautions.

Beretta had the gratification of showing in Paris to Dr. Lauder Brunton, and to other members of this association, the process used in Professor Richet's laboratory. The blood is taken aseptically from the carotid artery of a strong, healthy dog, and is received in sterilized receptacles closed with cotton-wool. The serum quickly separates itself, and can the next day be drawn by suction into glass pipettes also sterilized, which are immediately shut at both ends by means of a gas-burner. In this way are obtained flasks of this very convenient form filled with pure, clear, transparent serum more or less colored by hæmoglobin. It must be employed as unaltered and as fresh as possible. Of course a careful necropsy is made of the dog; its blood is microscopically examined, and no serum is used for man, except from animals in a perfect physiological state of health. It is interesting to notice that there has been made hundreds of necropsies of dogs of all kinds without finding a single case of spontaneous tuberculosis in this animal. The serum has sometimes been given by the mouth, but, of course, its effects are much more marked when injected. Injections of one or more cubic centimetres are generally made every two days in the subcutaneous cellular tissue of limbs or trunk. They must be performed with strict aseptic precautions and with sterilized syringes. In this manner several thousands of hæmocyne injections have already been given without any serious accident. The temperature of the patient is, as a rule, only slightly increased after each injection of serum. It should, however, be mentioned that very often a peculiar local swelling does appear at the site of injection, which is accompanied by redness, sometimes pain, and even short fever, but never by suppuration. A more or less widespread urticarial eruption, probably of a similar nature to the nettle-rash produced in some people by mussels, crustacea, or certain kind of drugs, is also common. It should be added that these phenomena are neither dangerous nor lasting. It has not yet been possible to establish any relation between their appearance and the action of the serum.

As to the results obtained by using dog's serum, principally against tuberculous diseases, it is not necessary to consider the details of the numerous cases, both medical and surgical, observed in France by Drs. Héricourt, Langlois, St. Hilaire, Clado, Morel-Lavalée, Feulard, Laborie, Wehlin, etc., nor even with those followed by Beretta at the Paris Hôtel Dieu, in Professor Verneuil's department. There is need only to describe the clinical phenomena usually noticed by different observers. In the first place, it must be acknowledged that in about one-third of the cases no apparent result was obtained. In the other two-thirds a real improvement, more or less marked, has been observed.

In all these cases it was remarkable to see how quickly the patient recovered his appetite, strength, and power of movement, while his weight gradually increased. As a rule, after a few injections, the patient sleeps better, the digestive functions become more regular; in some cases coughing, expectoration, sweating, and hæmoptysis are diminished. Twice it was noticed in young women that long-suppressed menstruation came on again. Lastly, in a number of cases, there has been a local improvement of the anatomical changes in the lungs, the larynx, the skin, bones, suppuration, etc. The favorable modifications were well maintained in several patients. These patients were in the first stage, or at most in the beginning of the second stage of the tuberculous evolution. Unfortunately, in most of the other cases the wonderful effects of the first days were not durable, and the tuberculous evolution has only been delayed for a few months.

To sum up: Dog's serum, in men as in animals, does not seem to have a special curative action against tuberculosis, but it possesses a powerful action, if not against the microbe, at least against its effects. It seems to act as a powerful tonic, and indirectly, by improving the general nutrition, puts the patient in a better condition to overcome his terrible disease. The blood of steers, tried by MM. Bertin and Pique, and the serum of sheep, tried by Professor Lépine, seem to give similar results.

Experiments upon animals' blood are very much *à la mode* now on the Continent, and among those who have worked in this field, Professor Mosso, from Turin, who made such interesting experiments upon the blood of eels

and other animals. In view of its valuable effects upon nutrition, dog's serum has also been used, and with the same success, against other cachexias produced by syphilis (cases of Professor Fournier), chronic malaria (a most remarkable case of Dr. Clado's), anæmia, etc. Lastly, Professor Pinard, by injecting dog's serum, has succeeded in saving a number of new-born children, the offspring of consumptive women. In considering the good done by serum to tuberculous patients, it must be borne in mind how important it is to feed them.

It is to be hoped that these encouraging clinical experiments on the effects of serum will be continued by physicians. Professor Richet, Dr. Héricourt, and Beretta are willing to give any details that may be desired, and to show in Paris the process used in the Physiological Laboratory of the Faculty of Medicine.

TREATMENT OF DIABETES WITH MORPHINE AND CODEINE.

According to FEDERIGO GORI, in the *Gazzetta degli ospitali*, the diet prescribed by Cantani, while it acts favorably at times upon the glycosuria of relatively recent cases, is not capable of suppressing the disease. This diet is sometimes borne badly; but in general this is not the case if lactic acid in large doses (150 grains) is employed at the same time. Both morphine and codeine exert a favorable influence upon the glycosuria ; but whereas the former may cause the disease to disappear completely, as much cannot be said for codeine. The effect of morphine is always manifest, but is more energetic when the patient is upon an absolute meat diet ; the same is true of codeine when the patient is upon a diet largely of meat, but when on the rigorous diet of Cantani its effect is doubtful. The effect of codeine, and probably that of morphine also, though with less intensity, persists after the administration of the drug has been suspended.

Morphine undoubtedly exerts its good effect, when the patient is upon a mixed diet, by not only removing the glycosuria, but also by increasing the body-weight and improving the subjective feeling of the patient. Both morphine and codeine have, besides their influence upon an existing glycosuria, an inhibitory action, as they prevent the increase or the return of the sugar, although such substances as favor glycosuria are swallowed in relatively large quantities. This action is stronger in the case of morphine, which may give valuable aid when it is desired to change from a meat to a mixed diet. Neither the employment of morphine nor codeine causes disturbance of any kind in the general nutrition, but it exerts rather a helpful influence and favors the increase of body-weight ; it always improves the subjective condition of the patient. It appears that the diabetic condition *per se*, independently, or nearly independently, of the diuresis, favors the tolerance of the two alkaloids.—*Deutsche Medizinal-Zeitung*, November 30, 1891.

FOUR HUNDRED AND SIXTY-FIVE ADMINISTRATIONS OF BROMIDE OF ETHYL AS AN ANÆSTHETIC.

JULIUS WITZEL, in a lecture before the Dental Society of Frankfort-on-the-Main, reviews the results obtained in four hundred and sixty-five administrations of ethyl bromide as an anæsthetic. The effects were good, except in twenty-eight cases, in which the following disagreeable symptoms were noted : Great excitement in nine cases, in four of them with marked sweating ; cyanosis in two patients, who were hilarious students ; asphyxia, which lasted a short time upon the occurrence of anæsthesia in a number of cases, and in two cases long enough to make artificial respiration necessary ; indisposition and weakness in the limbs in three of the cases, with severe vomiting, which, in one instance, was due to an overfilled stomach, and in the other two to swallowed blood ; urination in three cases, great sexual excitement more frequently ; in two cases, 60 and 30 grammes respectively of ethyl bromide failed to produce anæsthesia.

Recently, during a long operation, the patient was narcotized twice, and in two cases three times during one sitting, without unpleasant symptoms. It is worthy of note that in the second narcosis one to three parts of bromide of ethyl sufficed.

Witzel has also anæsthetized six patients with heart-disease and eleven phthisical patients. The results were good, except for cyanosis in one, and profuse secretion of sweat with acceleration of the pulse in another.

The method of administration employed by Witzel differs somewhat from that hitherto used. Usually, 20 grammes of the ethyl bromide are poured out in two portions, but Witzel at first pours only a few drops into the inhaler, and subsequently all the rest at one time. He comes to the conclusion that ethyl

bromide is the safest narcotic for human beings, and he recommends it urgently.—*Therapeutische Monatshefte*, November, 1891.

THERAPEUTICS OF DIPHTHERIA.

ADOLPH BAGINSKY, the well-known Berlin writer on diseases of children, says that a remedy, to be effective in diphtheria, must (1) be one which is capable of destroying the diphtheria bacillus where it first lodges and begins to be active, and do this without local or systemic injury to the person; (2) it must hinder the extension of the false membrane formed by the bacillus, or effect its speedy and final solution, in order to prevent the asphyxia which threatens the patient; (3) it must be able to render innocuous the poison developed by the diphtheria bacillus, which poison penetrates into the blood, lymph, and perhaps also into the nerves.

Baginsky admits that it can scarcely be hoped that a single remedy will ever meet all these indications; and, unfortunately, up to the present time we are without a satisfactory solution for a single one of the three conditions required, though it cannot be denied that with reference to the first two requirements real progress has been made in recent years.

The following remedies have been tested by Baginsky: Boric acid, three per cent. solution; permanganate of potassium, three per cent. solution; trichloride of iodine, 1 to 2000; chloride of gold and sodium, one per cent. (dabbed on); lactic acid, ten per cent. dabbed on and two per cent. as a wash and dusted on; carbolic acid (alcoholic solution), five per cent. dabbed on and two or three per cent. as a wash; corrosive sublimate, 1 to 3000 as a wash and 1 to 500 dabbed on; oil of citron, applied with a spray; acetic acid, two or three per cent. as a wash and gargle, five per cent. dabbed on; oil of turpentine by inhalation. In addition to the remedies employed, the nutrition of the patients was carefully looked after and heart tonics employed. When the false membrane extended to the larynx and caused stenosis, tracheotomy was performed as quickly as possible.

Of the remedies employed, Baginsky says corrosive sublimate proved to be the best, next to it being a three per cent. alcoholic solution of carbolic acid, which was objectionable on account of its horrible taste. Boric acid, salicylic acid (recommended so highly by D'Espine and Marignac), trichloride of iodine, and chloride of gold and sodium fell far below expectations. Acetic acid had, as a rule, to be given up and corrosive sublimate substituted for it. Permanganate of potassium accomplished nothing noteworthy. Inhalations and sprayings of oil of citron are very costly, and did not accomplish what was expected. No decidedly favorable effects from oil of turpentine upon steaming hot water were recognized.

A caustic effect from any agent does harm, and is to be avoided.

In addition to lactic acid, lime-water and five to ten per cent. solutions of papayotin were employed as solvents. These agents were used especially where there was a great deal of false membrane, free from foul odor, but persisting for a long time. When the papayotin could be applied without adding to the irritation existing, it often did good service. It did not prevent extension of the process to the larynx.

In addition to the use of the remedies named, the ice-bag was used, and ice given internally until the inflammatory infiltration of the mucous membrane of the pharynx had disappeared. Subsequent hyperæmia and more subacute or chronic swellings of the pharyngeal mucous membrane were overcome by applications of solution of tannin, 1 part to 80, with 20 parts of glycerin.

In two cases a three per cent. solution of carbolic acid was injected in the neighborhood of the infiltrated tonsils, without any result, except perhaps the production of submucous hemorrhages.

In two cases a glycerin extract of the product of the bacillus of diphtheria was injected into the tonsils several times, the quantity employed being from one to two milligrammes. There was neither local nor general effect from it. Both children fell victims to the severe septic process.

Internally, heavy wines were employed freely. When there was great loss of strength, cognac and subcutaneous injections of camphor in oil and ten per cent. alcoholic solution were also used. In mild cases, chlorate of potassium, in one or two per cent. solution, was used at first, but subsequently was stopped, for fear of nephritis. The same is true of oil of turpentine, which was nearly always vomited by children. Other remedies employed were decoction of cinchona, ten per cent., with the addition of 10 parts of chlorine-water; tincture of the chloride of iron, the papayotin wine introduced by Radlauer, and the preparation now

sold under the name of tinctura rusci composita. None of the remedies had a decidedly favorable action, but the decoction of cinchona was the best. Inhalations of oxygen have a vivifying effect upon children severely sick, as reddening of the lips and mucous membranes showed; a more favorable effect was not noticed.

When paralysis of the heart threatened, hypodermic injections of strychnine, camphor, and caffeine were frequently employed; none of them had a positive effect. In palsies occurring early, Baginsky says he has learned to fear strychnine, and he avoids it almost entirely. His treatment of the complications and sequelæ of diphtheria has been given in Bd. xiii. of the *Archiv*, to which the reader is referred. All antipyretic treatment in diseases following diphtheria is to be feared; even the cold bath should be employed with the greatest care. Diphtheritic nephritis, when not associated with severe palsy, yields to appropriate dietetic regimen, particularly a more or less strict milk diet. In this complication one must avoid giving too many medicines.

Baginsky has treated two hundred and forty-four cases, with a mortality of 40.04 per cent. In explanation of this high death-rate, he says that thirty-seven of the children who died were brought into the hospital with very severe gangrenous or septic forms of diphtheria. Excluding these, and including a number of cases in which tracheotomy was performed, the mortality would be 23.1 per cent.—*Archiv für Kinderheilkunde*, Bd. xiv., 1891.

INTRAVENOUS INJECTION OF SALINE FLUID FOR HEMORRHAGE.

Pye-Smith reported before the Sheffield Medico-Chirurgical Society the case of a man, aged 26 years, who was admitted to the Sheffield Public Hospital on September 25, under the care of Dr. Keeling, in whose absence Mr. Pye-Smith attended him. He had been accidentally shot in the left leg three hours previously, and had large lacerated wounds, with compound fracture of tibia and fibula. He had bled profusely, and when admitted was much blanched and collapsed, with feeble and rapid pulse and cold extremities. Amputation being necessary, but the patient unfit for it, a pint and a half of three-quarters per cent. saline solution was injected into his saphenous vein with marked improvement, and amputation just below the knee was performed. Circulation then failing again, another pint and a half was injected before he recovered from the ether, and at once his pulse and color were greatly improved, and in a few hours he had completely rallied, and subsequently made a good and rapid recovery. Mr. Pye-Smith referred to the case recorded by Mr. Lane in the *Lancet* of September 12, and traced the history of transfusion and saline injection from the seventeenth century to the present time, insisting on the dynamic value of saline injection, and advocating its use as far safer and more easily carried out than transfusion of blood.—*Medical Press*, December 2, 1891.

THE EXISTENCE OF A MYDRIATIC ALKALOID IN LETTUCE.

T. S. Dymond, from a research in the laboratory of the Pharmaceutical Society of Great Britain, contributes the following information concerning the mydriatic alkaloid of lettuce. The attention of the author was drawn a few months ago to the mydriatic action of an extract prepared at Hitchin from common lettuce, *Lactuca sativa*, when in flower. On examination, the mydriatic action was found to be due to an alkaloid. The extract closely resembled belladonna extract in appearance, smell, and taste; but a dose of 5 grains had been without injurious effects. Three other commercial extracts of lettuce were examined,—viz., an extract of wild lettuce, *Lactuca virosa*, prepared according to the directions of the British Pharmacopœia, the history of which was unknown, and extracts of both the wild and the cultivated lettuce, prepared at Market Deeping, in Lincolnshire. An extract of that variety of the cultivated plant known as Cos lettuce was also examined. They all contained an alkaloid which had a very marked power of dilating the pupil of the eye. Finally, a dried specimen of wild lettuce, collected when in flower, was examined. It contained a mydriatic alkaloid.

The impure alkaloid obtained from the extract was a light-brown syrup which possessed powerful mydriatic properties. In order to purify it it was converted into the oxalate. The alkaloid recovered from the pure oxalate, when crystallized from chloroform, closely resembled hyoscyamine, both in appearance and in melting-point. The aurochloride was then produced by the usual methods, and this, after recrystallization, was obtained in the shining flat needles characteristic of the aurochloride of hyoscyamine.

The estimation of the gold and the base in this compound showed that the alkaloid was one of three isomeric mydriatic alkaloids having the formula $C_{17}H_{23}NO_3$, while its melting-point was 159.75° (corr.), and closely corresponded with that ascribed by Ladenburg to the aurochloride of hyoscyamine. The plant does not appear to contain a second mydriatic alkaloid, although it must be remembered that only small quantities of material were operated upon.

The author has thus shown that both wild and cultivated varieties of lettuce, especially when the flowering stage is reached, contain hyoscyamine, the mydriatic alkaloid occurring in *Hyoscyamus niger*, *Atropa belladonna*, and other plants belonging to the natural order Solanaceæ, and it is probable that to the presence of this alkaloid the sedative and anodyne properties of extract of lettuce are due.

That this important constituent has been until now overlooked is probably due to the fact that in chemical investigations upon lettuce, the dried milk sap, lactucarium, has alone been examined, although its value as a sedative and anodyne is by no means established. The author found that lactucarium of both English and German manufacture was devoid of mydriatic properties and contained no alkaloid whatever.

The fact that lettuce contains a poisonous alkaloid is not of great importance in connection with its use as a vegetable, since it is only used for this purpose in the early stages of its growth, before the bitter milk has been produced, when the hyoscyamine is only present, if at all, in minute quantities. The amount of mydriatic alkaloid in the extract prepared from garden lettuce when in flower is not more than .02 per cent. Nevertheless, cases have been recorded in which the immoderate consumption of lettuce has led to unpleasant and even fatal results. Lettuce belongs to the natural order Compositæ. This is the first occasion on which hyoscyamine has been found in plants not belonging to the natural order Solanaceæ.—*Pharmaceutical Journal and Transactions*, December 5, 1891.

THE USE OF ANÆSTHETICS IN LABOR.

The general recognition of the fact that anæsthesia is to be produced, at least to some extent, in cases of labor, renders the question as to the manner of the employment of anæsthetics of very great importance. In the *Brooklyn Medical Journal* for December, 1891, Dr. G. R. Butler contributes a paper on this subject in which he speaks as follows, referring also to the necessity of continuing anæsthesia while perineal lacerations are being repaired.

The use of cocaine by absorption, or by hypodermic injection, is not satisfactory. Its anæsthetic action soon passes off, owing to its rapid diffusion, being unconfined, and its entrance into the circulation is apt to produce a loquacious, agitated, and pseudo-hysterical patient.

Ether is open to the objection that many primary perineorrhaphies have to be done by artificial light, and the danger of explosion is to be considered, as well as the more elaborate apparatus required for its administration.

Is there any reason why the chloroform anæsthesia of the second stage cannot be continued into the third stage, thus allowing the necessary operative work to be done accurately and well while waiting for the placenta to separate?

Most writers state that the relative safety of chloroform ceases with the expulsion of the fœtus. This judgment appears to be founded on the possible danger of the occurrence of syncope, due to the sudden lessening of abdominal pressure and the consequent overfilling of the veins of the abdomen, thus greatly reducing the supply of blood to the brain and medulla.

It is permissible to inquire if this is a highly-probable danger. In alluding to its probability, the occasional supervention of syncope during or after paracentesis abdominis is quoted. This appears to be hardly a fair comparison. In removing peritoneal effusions of large amount, the patient is frequently in a sitting position, thus favoring syncope. In labor, the patient is recumbent, with the head low.

If this reasoning from analogy is permissible, the removal of the fluid from large ovarian tumors should be the signal for the withdrawal of the anæsthetic, whereas it is but one of the early steps of the operation. The coexistence of ovarian cystoma and peritoneal effusions is not rare.

Furthermore, there is possibly some difference in the degree and extent of abdominal pressure between pregnancy and hydrops abdominis. In pregnancy a solid and a fluid are contained in a strong muscular sac—the uterus. The pressure endured by the abdominal veins cannot be so uniformly and generally diffused as that caused by a large amount of serum lying free in the abdominal

cavity and exerting a steady and widely-extended pressure on the return circulation. Consequently it does not appear just to compare the quick removal of a limited pressure with the quick removal of a much more widely-distributed force.

From this point of view it may be inferred that the tendency to syncope after the delivery of the fœtus has been somewhat overestimated.

As a matter of fact, chloroform anæsthesia is usually pushed to the surgical degree as the head emerges from the vulva. The state of anæsthesia thus produced lasts for some moments, even if the chloroform be at once withdrawn. It requires a very moderate additional amount to prolong the state of unconsciousness sufficiently to repair the perineum. The writer has personal knowledge of ten or twelve cases in which it has been done without appreciable ill effects.

Cognate to the preceding question is another relating to the use of anæsthetics during labor in subjects of organic disease of the heart. I have had occasion to pass on a number of cases with reference to the giving of anæsthetics for operations. Valvular disease *per se* is not a contra-indication. The outcome depends very largely upon the condition of the heart-muscle and the degree of compensation present.

A first sound of good muscular quality, a murmur accompanying and not replacing first or second sound, absence of notable dyspnœa and œdema of lower extremities, absence of marked venous fulness, form a satisfactory clinical picture.

The opposite conditions are suspicious.

Given a case of this suspicious character, is it proper to use anæsthetics?

The principal element of danger attending labor in cases of cardiac disease appears to be the fixation of the thorax and the violent, more or less voluntary, expulsive efforts attending the pains. The normal negative pressure or force of thoracic aspiration is *nil*, or converted into a positive pressure which hinders instead of assisting the circulation of the blood. This condition is clearly evidenced by the flushing of the face, the venous fulness, and the increased action of the heart.

It must necessarily put a serious tax upon a weak or degenerated heart-muscle.

The problem, then, is whether to allow the heart to struggle against the obstacles caused by the more or less voluntary expulsive efforts, or to annul the latter by anæsthesia, substituting the risk of the latter for the inevitable risk of the former.

It is difficult to give a categorical answer. The advantages of an anæsthetic are obvious in annulling pain, which is undoubtedly a serious source of depression, and in lessening or stopping involuntary expulsive efforts.

The proper course to pursue, so far as it can be outlined, is to use primarily all suitable medicinal means for sustaining the heart-action. If the patient is not doing well, give chloroform tentatively, substituting ether at a later period if necessary for its early stimulant effect upon the heart.

This was essentially the course pursued, with good results, in three cases of the kind under discussion, of which there are, unfortunately, no notes.

The medicinal treatment of cardiac disease during labor requires allusion. Digitalis is commonly and rightly administered. It should be remembered that it has the power of contracting the arterioles as well as strengthening the cardiac systole and prolonging the diastole. Strophanthus is not open to this objection, but is not as certain or reliable in its effects. Nitroglycerin is of much service given alone or with digitalis. Towards the close of labor its utility would be questionable as tending towards uterine hemorrhage. Strychnine is of great use in energizing the cardiac muscle and the centres of respiration and circulation. Caffeine, in doses of at least 5 grains, is very useful. The ordinary small dose is of little service. Camphor, sparteine, and musk should not be forgotten.

In pulmonary disease, as severe asthma, bronchitis, or broncho-pneumonia, especial reliance should be placed upon the administration of strychnine, nitroglycerin, oleum terebinthinæ, atropine, and ammonia.

Finally, in both cardiac and pulmonary disease existing during labor, and attended with engorgement of the right side of the heart, the propriety of venesection should be considered.

TREATMENT OF DIPHTHERIA.

Dr. C. Smith, of Casterton, Australia, recommends that the treatment of diphtheria shall consist in the *continuous* inhalation of a vapor composed of a mixture of carbolic acid, eucalyptus oil, and turpentine, until the patient is well, and at the same time support the heart by stimulants, such as tincture of digitalis, tincture of belladonna, and aromatic spirits of ammonia. The principle of inhala-

tion is not new, neither are the ingredients; but the method of applying it, and its continuous use, he believes, are so. It is on the application of well-known principles to the cases under consideration that any claim he may make to originality must rest. The method is: Place the patient in bed,—this is imperative,—first, in order to facilitate the inhalation; and, secondly, by the retention of the horizontal position as much as possible to spare the heart, for there is decided depression in some cases, especially if the patient be young, or the stronger mixture be used; but with proper precautions this is not alarming. Fix a tent over the patient by arranging a sheet, or other cloth,—in cases of children always, with adults generally; this should not be too large, and should be closed in on every side, *except in front of his face*, so that he can look about and also be readily watched, and to allow a supply of fresh air for respiration. Clothe him lightly, as the cot soon becomes warm. Mix the ingredients together in the following proportions: Carbolic acid 1, eucalyptus oil 1, turpentine 8. This is the most generally useful proportion, but greater strength, combined with greater efficiency, may be gained by increasing the relative proportion of the two first, either to carbolic acid 1, eucalyptus oil 1, turpentine 6, or even to turpentine 4; this is, however, decidedly more depressing, and more distinctly affects the urine, the carbolic acid, apparently, being the depressing agent. The former strength is generally sufficient, and can apparently be borne for any length of time, it is, therefore, better to use it in all cases of very young children, and to return to it even in older patients after the stronger has been used for three or four days, if the weakness of the pulse, or a dark clouded condition of the urine, shows too much absorption of carbolic acid. The judgment of the medical attendant must be exercised in this matter, but the strengths 1–1–8 (weak) and 1–1–4 (strong) are the limits I have found it advisable to fix for the composition; less than the one is too weak to be effectual, stronger than the other I have never tried, but feel sure it could not long be tolerated. No water, spirit, or other ingredient should be mixed with them.

In young children and in all laryngeal cases use steam continuously in the cot, either by special apparatus or by placing a bucket at the foot in which boiling water is renewed every half-hour, day and night. In the mixture soak two cloths, linen or otherwise, about a foot square; place one close to the face, the other on the pillow near the head, on pieces of paper to avoid unnecessary soiling of the bed-clothes; in adults, or children over 8 or 10 years of age, one or two other cloths of the same size may be soaked and hung about the cot; these must all be kept moist with the mixture, as they tend to become dry, but need not be actually dripping. Care must be taken that they do not touch the face, although very close to it, otherwise the skin will become burnt; a wire cage might possibly be arranged to avoid this difficulty. The nurse must watch to see that they are always sufficiently near to give off a strong odor close to the patient's mouth, or several cloths must be used in the tent, so that it may be filled with the vapor.

If old enough to keep the mouth open, he should do so voluntarily, a piece of cork or wood being placed between the back teeth to assist him, for there is considerable difficulty in maintaining the mouth open for long in this position. I have found that a child of 4 will do this without trouble; if younger, or unmanageable, or if the case does not progress satisfactorily, plug the nostrils loosely with cotton-wool. This necessitates keeping the mouth open in order to breathe. The actual impact of the vapor on the diseased spot is essential to cure, and by the method mentioned this is facilitated. Sometimes the child will talk or sing, while at others he will simply sit in his cot and cry; in either case, plugging of the nostrils is not necessary, but it is often of the greatest assistance, and should seldom be omitted, especially during sleep. This, of course, applies only when the deposit is chiefly on the tonsils or soft palate; when laryngeal only, it is unnecessary, and even if pharyngeal as well, it will generally be safe to omit the nostril plugs, for the cure of the laryngeal portion of the disease takes so long that the pharyngeal portion almost certainly disappears at the same time. Should there be nasal diphtheria also, the nostril plugs must not be used, or at rare intervals. The vapor must be applied in the manner described, *and in no other*. One of my patients was nearly lost through the nurse putting the mixture into the hot water, from which the steam was derived, and omitting to put it on the cloths, when it appeared to be almost inert; while, on the other hand, if applied by vaporization by a spirit lamp, as recommended for disinfecting purposes, it causes headache, and is, I think, much too strong for patients, especially if young. Simple evaporation from the cloths themselves is

sufficient. The steam mixing with the vapor in the tent softens it, and thereby prevents too great irritation of the mucous membrane. I have generally used the carbolic acid in the form of Calvert No. 5, which is cheap, but No. 2 is pleasanter, and causes less discomfort.

In some cases, the heart depression is considerable, especially if the 1–1–4 strength be used, or the case be long continued. To combat this, I give from the commencement of the case brandy or other spirit in full but regulated doses, also tincture of digitalis, tincture of belladonna, and spiritus ammoniæ aromaticus at intervals of four hours, and in quantities suited to the age of the patient; also, as much food as he can be persuaded to take. This weakness of the heart's action must be remembered if it be decided to continue other treatment at the same time, so that the patient be not too long kept in a sitting position. The soreness of the throat also, that in bad cases usually comes on twenty-four or thirty-six hours after commencing the treatment, ought to be remembered, as any local dressing is then very painful. There must, of course, be no cessation of treatment, or the disease will quickly progress, even at the eleventh hour, so that it is well to continue the inhalation for twenty-four hours after all signs of the disease have disappeared. From four or five to ten days are required for a cure, only the cases seen earliest taking less than four days; laryngeal cases generally take longer than pharyngeal.

The effects of treatment begin to show themselves within twenty-four hours, supposing the case to have been a bad pharyngeal one, with extensive deposit, and the 1–1–4 mixture to have been used without steam. First, the intervals between the patches gradually clear up, and become red. If the mouth has been kept open, this change is apparent in every part, especially at the front; whereas, if the breathing has been through the nose, the improvement is most apparent at the posterior part. Secondly, the deposit becomes altered in color, gray, and dead-looking, the edges loose and well-defined; and gradually their size diminishes. After a time the redness of the palate begins to show through the deposit, and finally the whole exudate vanishes. There is *no expectoration*, and no coming away in pieces, it simply dissolves away and disappears, leaving the throat intensely red and sore. The treatment being still continued, this will also gradually pass away, but at this stage the 1–1–8 is strong enough to complete the cure. In milder cases, or if steam be used, there is less redness, sometimes very little, especially with the 1–1–8 mixture, but the membrane slowly separates and disappears in the same way. If the plugs be removed from the mouth and nose for some hours, the membrane gradually grows again on the tonsils, even though the deposit in the larynx may be softening down from the inhalation through the nose, but it will again disappear if not disturbed. Occasionally it appears to progress, apparently in spite of every precaution having been taken, but it will generally be found, on inquiry, that some mistake has been made, the omission of the plugs from the nostrils being the most common. If no fault can be detected, simply continue the treatment. It is usual for membrane to be re-formed on surfaces from which it has been mechanically removed, even to the end of the case, but after twenty-four hours it should not spread, but rather diminish in extent. Coincident with the local improvement is a general one; the fever disappears, the general condition improves, appetite returns, and the patient becomes lively and cheerful. After a while, if the case be long continued, some depression again sets in from the continued inhalation, but by attention to the instructions given, especially as regards the regulation of the strength of the mixture, this can be kept within safe limits, and under no circumstances has it been necessary to discontinue treatment altogether, so far as my experience has gone.—*Australian Medical Journal*, October 15, 1891.

TUMENOL.

The success that has attended the introduction of ichthyol, which is understood to be a product of distillation of a peculiar sulphurous bitumen, appears to have suggested experiments in a similar direction, with the result of the appearance of another claimant on the therapeutist's attention, under the name "tumenol." According to Dr. Spiegel, all mineral oils contain a class of unsaturated hydrocarbons, capable of reacting towards sulphuric acid and of being converted by it into still less saturated derivatives; these hydrocarbons are said to constitute the mother substance of tumenol. For the preparation of the tumenol compounds the mineral oil is first treated for the separation of phenols and acids with soda lye, and afterwards for the removal of bases and pyrrol-like bodies with

seventy per cent. sulphuric acid. Upon treating the purified oil with concentrated sulphuric acid the unsaturated hydrocarbons undergo sulphonation, with evolution of sulphur dioxide, and a dark-colored acid syrup is formed, from which can be separated, by washing with water and solution of sodium chloride, a mixture of sulphone and sulphonic acid. This is treated with soda lye, to convert the sulphonic acid into a salt, and then shaken with ether, which takes up the sulphone and leaves the sodium salt in the aqueous liquid. The "tumenol-sulphone," after purification, is described as being a dark-yellow, thick liquid, readily soluble in ether, ligroin, and benzol. Although it is insoluble in water, it is taken up by an aqueous solution of tumenol-sulphonic acid, to which it imparts a strongly bitter and aromatic taste. Upon analysis tumenol-sulphone gave figures approximating to the formula $(C_{42}H_{67}O)_2SO_3$. Tumenol-sulphonic acid is obtainable as a dark powder, having a peculiar faintly bitter taste. It is easily soluble in water, and the solution can be evaporated to the consistence of an extract without separation taking place; it is, however, precipitated from solution by acids or salts. In a faintly-acid solution of gelatin it forms an elastic caoutchouc-like precipitate that can be drawn out into threads. The alkali salts of tumenol-sulphonic acid are easily soluble in water, from which they can be salted out like soaps. The salts of the alkaline earths and heavy metals are insoluble in water, with the exception of those of antimony and mercury. The acid converts corrosive sublimate into calomel upon boiling; it also reduces ferric chloride to a ferrous salt and permanganate to a lower oxide of manganese, and upon boiling with an acidulated solution of bichromate is converted into an insoluble oxidation product. The figures obtained in an analysis of the calcium salt corresponded to the formula $(C_{42}H_{51}O_{22}SO_3)_2Ca$. "Commercial tumenol" contains both the sulphone, which from its consistence is designated "tumenol oil," and the sulphonic acid, which has been called "tumenol powder." As, however, the acid in the powder form is relatively costly, it is used also in a viscous condition. These compounds have recently been the result of a report to the German Dermatological Society by Professor Neisser. Professor Neisser states that he has experimented with two forms of tincture, one containing about ten per cent. of tumenol, the mother substance, dissolved in a mixture of equal parts of ether, rectified spirit, and water, and another in which glycerin was substituted for the water. The former, when painted on a surface, dries readily and completely, but the latter forms a somewhat fatty, smeary coating, which holds a dusting powder well. Of the purified sulphonic acid aqueous solutions were used. The tumenol is said to make up very well with zinc gelatin, and all three preparations were used in the form of ointment, pastes made with zinc oxide and starch, and soap plasters, but for the ointments and pastes the commercial tumenol or the tumenol oil (sulphone) was found most suitable. Professor Neisser considers the tumenol compounds to differ entirely from ichthyol, since they depend for their therapeutic action rather upon their powerful reducing properties than upon the combined sulphur. Summing up the results of two years' experience, he says that tumenol will be found useful in nascent eczema, erosions, excoriations, superficial ulcerations, and in different forms of pruritus.—*Pharmaceutical Journal and Transactions*, November, 1891.

AN IDEAL DRESSING FOR ABDOMINAL WOUNDS.

The ideal dressing would seem to be a solution or paste which would quickly harden until it forms a thin, flexible, impenetrable layer over the wound and the surrounding skin, which would be thus hermetically sealed, in this way absolutely preventing any invasion of the wound from the outside and preserving the aseptic conditions established at the operation. It would also be desirable, if possible, to add to these qualities the property of transparency, allowing the line of the wound and the stitches to remain under constant observation, noting changes without disturbing the dressing. A dressing possessing such qualifications may certainly be named ideal.

My researches have been in large measure rewarded; for, although unable to secure a transparent dressing unaffected by cotton or other protective in contact with it, I have found, and for two years past used, a dressing which hermetically seals the wound in a thin layer, with certainty preventing the invasion of pathogenic organisms from without. This dressing is easily made, simple, and always satisfactory. After closure of the incision, the skin, the line of the wound, and the sutures are dried, and two layers of sterilized gauze or cheese-cloth, large enough to project five to ten centimetres (two to four inches) beyond the incision on all sides, laid on the

skin. This is saturated with the following adhesive mixture, which is evenly distributed over the whole surface :

℞ Squibb's ether, or washed ether, and alcohol, absolute, equal parts;
Bichloride of mercury (Merck's recryst.), enough to make the solution $\frac{1}{1000}$;
(Anthony's) snowy cotton, enough to make a syrupy consistence, added in small pieces, stirring.

As soon as this is poured over the wound evaporation begins to take place at once, and the celluloidin hardens, gumming the gauze fast to the skin. To avoid delay in waiting for this to grow quite hard, and to prevent adhesion to the cotton applied above it, the whole surface is freely dusted over with a finely-powdered mixture of iodoform and boric acid :

℞ Pulvis iodoformi, 4 grammes, or 1 drachm;
Acidi borici, 28 grammes, or 7 drachms.
M.—Exactissime. Sig.—Dust freely on wound.

This powder is of itself an invaluable protective. I use it constantly in obstetric cases, separating the labia and throwing it into the vagina, where it acts as a guard to the vaginal outlet against septic invasion from without.

The wound thus sealed with celluloidin gauze may be left untouched for a week or more, when the dressing should be softened with water, or more rapidly with ether, the gauze lifted off, and the stitches taken out.

If there are any signs of suppuration, as evinced by pain, local tenderness and redness, associated with elevated temperature, the dressing should be removed earlier and the discharge of the stitch-hole abscess promoted in the usual way.

The purpose of cotton heaped up on the abdomen is now no longer protective and antiseptic; it merely serves the purpose of padding out the inequalities for the application of the bandage. Common cotton may be substituted for absorbent and prepared cotton by simply sterilizing it in the Arnold steam-sterilizer. — H. A. KELLY, *American Journal of Obstetrics*, December, 1891.

THE LOCAL TREATMENT OF CUTANEOUS TUBERCULOSIS.

DR. G. H. FOX, in a paper on the therapeutics of cutaneous tuberculosis, gives the following practical advice in regard to the local treatment by drugs :

Of caustics and various applications which tend to destroy lupus tissue by virtue of their chemical effect, a long list might be given. All have proved of service in certain cases; few have manifested any remarkable and distinctive therapeutic value, while none have as yet found their way into general favor. I will merely mention nitrate of silver, caustic potash, chloride of zinc, lactic acid, ethylate of sodium, iodoform, and aristol, and remark that in spite of time-honored usage or eminent recommendation, they possess no special value in the treatment of lupus, and in many respects are greatly inferior to remedies of which I shall presently speak.

The use of bichloride of mercury, on account of its bacillicide properties, has been advocated by Doutrelepont, Tausini, White, and others. My own experience with this method of treatment has proved unsatisfactory, and the slight improvement which took place in a few cases appears to be due rather to a stimulating effect such as would follow its application to the nodules of acne or rosacea, rather than to any parasiticide action. The reported experience of others has been similar to mine.

Of the various substances applied to ulcerating lupus and to the curetted surface, with a view to the complete destruction of the lupus tissue, no one has perhaps met with greater favor than pyrogallol. This was introduced by Jarisch, who recommended a ten per cent. ointment to be applied twice daily, after thorough curetting of the patch. At the end of three to five days, or when the surface appears swollen and of a dirty grayish hue, iodoform is to be plentifully applied, which tends to check the pain produced by the ointment. This is covered with linen smeared with boric-acid ointment, and bandaged for several weeks, until the suppuration lessens and healing begins. Mercurial plaster is now applied, and after four or five weeks the same cyclus of curetting, pyrogallol, iodoform, with boric-acid dressing, is repeated in order to prevent the return of the lupus in the form of miliary infiltration. Finally, the wound can be healed rapidly by skin transplantation.

For many years I have had more satisfactory results from a somewhat similar plan of treatment than from any other method which I have employed. I have, however, used a much stronger ointment of pyrogallol, varying from twenty-five to fifty per cent., which greatly shortens the duration and adds to the efficacy of the treatment. The application is sometimes quite painful for the first twenty-

four or forty-eight hours, and may give rise to considerable inflammation of the part. But the continued use of the strong ointment soon produces a benumbing sensation in the locality to which it is applied, and no further complaint of pain is made until the ointment is discontinued and a simple dressing is substituted. This application, coinciding with the separation of the sloughing tissue, will often be regarded by the patient as more painful than the pyrogallol. When the dirty, brownish, pultaceous slough has separated and left a clean, raw surface, mercurial plaster may be applied, beneath which the ulcer will become converted into a smooth, pliable cicatrix. Or, if the raw surface be considerable in extent, Thiersch's method of skin transplantation may be employed with benefit. I have no hesitation in recommending this use of (1) the curette, (2) the strong pyrogallol ointment, and (3) the mercurial plaster as a most admirable method in the treatment not only of lupus but of rodent ulcer. It is a method which has many advantages and few objectionable features.

Salicylic acid is a remedy which experience has proven to be of service in the treatment of lupus and other forms of cutaneous tuberculosis as well as in many other affections of the skin. In a letter to the *British Medical Journal*, in 1884, it is recommended in the treatment of lupus vulgaris by Dr. J. G. Marshall. In a paper published in the London *Lancet* in 1886, Unna advocates its use in most enthusiastic terms. He recommends the application of varying strength, but all containing 2 parts of beech-tar creosote to 1 part of salicylic acid. The pain caused by the acid alone is very severe, and constitutes a serious objection to its use, but it is greatly mitigated by the anæsthetic action of the creosote, which Unna speaks of as the "morphine of the skin." The creosote has an antiseptic and bacillicide effect, and is therefore both corrigent and adjuvant to the salicylic acid. A strong plaster is at first applied to destroy the epidermic covering of the lupus tissue. Before the second plaster is applied to the raw surface, a solution of cocaine may be employed, which will temporarily deaden the pain, which in a short time yields to the more lasting anæsthetic effect of the creosote. The remedy leaves a smooth cicatrix, but, according to Unna, redness of the scar is apt to persist for some time, owing to a paresis of the capillaries or destruction of the stratum granulosum.

I have used this combination of salicylic acid and creosote in an Irish-moss plasma, and so far with satisfactory results, but my experience with it has not been sufficient to say whether or not it is equal in value to pyrogallol.

I will mention but one more local remedy which, in the case of one of my lupus patients at the New York Skin and Cancer Hospital, has produced a remarkably beneficial effect. The remedy is fuchsine. The patient, a man of about 35 years of age, had suffered from lupus of the right ear and neck for eight years. Surgical measures had been employed by one or two dermatologists with no marked results. Injections of Koch's lymph were employed for two months or more at St. Luke's Hospital, and although the reaction was characteristic, the patient was finally discharged with no apparent improvement. He now entered my service at the Fordham branch of the Skin and Cancer Hospital, where for the past three months the fuchsine treatment has been faithfully carried out by Dr. A. C. Lewis. The surface of the affected skin, or a portion of it, has been very superficially scarified with a scalpel twice a week, and a one per cent. alcoholic solution of fuchsine painted over the part. The treatment has been almost painless, but nevertheless the elevated lupus tissue has completely flattened, and now only dull-red patches are to be seen. The prospect of an absolute and speedy cure in this case seems quite encouraging.—*Boston Medical and Surgical Journal*, November 12, 1891.

EPHEDRA AS A REMEDY FOR RHEUMATISM.

Very recently Dr. Betchine, of St. Petersburg, has reported in the *Revue de Thérapeutique* his studies upon the antirheumatic properties of *Ephedra vulgaris*, or *Ephedra distachya*. The plant is widely distributed over Russia, and has long enjoyed a great reputation among the peasants as an antirheumatic and antisyphilitic remedy. Dr. Betchine has employed a decoction of four grammes of the powdered bark and root in twenty grammes of water, the dose of which is a dessertspoonful every two hours. The remedy appears to be particularly useful in acute articular and muscular rheumatism. In from twenty-four to forty-eight hours the pain is relieved, the temperature is reduced, and the pulse and respiration are quieted. In about eight or ten days the patient may be said to be cured, and the pericarditis that

sometimes exists disappears with the other rheumatic manifestations. Chronic rheumatism is not so favorably influenced by the drug, and the author recommends it only in cases accompanied with more or less fever. The remedy possesses laxative, diuretic, and diaphoretic properties, to which its favorable influence upon this disease may be attributed. Professor Nagai, of Tokio, has isolated the alkaloid ephedrine from *Ephedra vulgaris*. This, injected into dogs and cats, produces general convulsions, mydriasis, and exophthalmia. It is an efficient mydriatic, but has not yet been put to practical use.—*New York Medical Journal*, November 28, 1891.

LOCAL CHLOROFORM ANÆSTHESIA.

In the *Medical Press* for November 18, 1891, a correspondent reports the following method of producing local anæsthesia:

During the past winter I removed a small tumor from the hand of a nobleman in Rome, having first frozen the part by means of chloroform applied by spray. Unwilling in this case to administer it internally, and anxious to try its effect externally, I sprayed his finger for about ten minutes with chloroform. Before commencing the operation the finger became quite cold, and felt like a piece of ice. The removal of the tumor subsequently was not felt by the patient. The chloroform did not produce any effect on the circulation, nor on the nervous system. The operation lasted about five minutes, the patient declaring he felt nothing. [illegible]ew the cut surfaces together with silver wire, which I removed on the fifth day, the part healing by first intention under carbolic acid lotion.

BENZOYL-NAPHTHOL.

Another compound of β-naphthol, in this case containing the benzoyl radicle, has been introduced by Messrs. Yvon and Berlioz as an intestinal antiseptic. This compound is prepared by heating together, in a glass flask of about two litres capacity, upon a sand bath, two hundred and fifty grammes of β-napthol and about two hundred and seventy grammes of very pure benzoyl chloride. The heat is applied so as to raise the temperature gradually to 170° C., at which point the reaction goes on regularly, and is continued at that point for thirty minutes. This part of the operation should be conducted under a hood to avoid injury from the irritating vapor given off. Upon cooling, the liquid forms a solid mass, consisting of benzoyl-naphthol and a little naphthol. The crude product is purified by two or three crystallizations from boiling alcohol. In some preliminary experiments, benzoyl-naphthol is said to have proved as efficacious as an intestinal antiseptic as either β-naphthol or betol. Over these it is claimed to possess the advantage of being perfectly tasteless and non-irritant, and that its decomposition in the system results in the formation of hippuric acid, a normal constituent of the urine. Benzoyl-naphthol is described as crystallizing from alcohol in microscopical crystals, almost odorless and tasteless, nearly insoluble in water at ordinary temperatures, more soluble in alcohol, the solubility rising rapidly with the temperature, but most soluble in chloroform. It is best administered in small doses of 25 to 50 centigrammes, repeated frequently, given in a cachet or suspended in *eau sucrée;* but as much as five grammes daily may be safely given to an adult.—*Pharmaceutical Journal and Transactions*, November, 1891.

THILANIN.

Under the name "thilanin" another substance has been introduced which is represented as being a sulphuretted lanolin, containing three per cent. of sulphur, though whether in combination with the cholesterin or with the fatty acids has not been decided. Thilanin is described as a brownish-yellow, unctuous substance of the consistence of lanolin, and is claimed to be valuable as an application in skin-diseases on account of its non-irritant property.—*Pharmaceutical Journal and Transactions*, November, 1891.

HÆMORRHAGIC PERICARDITIS SUCCESSFULLY TREATED BY ASPIRATION.

Dr. Churton, of Leeds, has recently reported a case of hæmorrhagic pericarditis in which frequent aspirations were followed by recovery. A man, aged 46 years, well made, of quick intelligence, was admitted into the Leeds infirmary on July 24, 1890, with dyspnœa and pain in the chest. There were signs of fluid in the right pleura and in the pericardium. The chest wall was distinctly œdematous; no œdema elsewhere. Patient had taken very little solid food for fifteen years, living chiefly on beer and whiskey, but had no illness until the last seven weeks. Twenty-

nine ounces of clear fluid were withdrawn from the right pleura without giving any relief. (Five subsequent attempts to substitute tapping of pleura for aspiration of pericardium always similarly failed to effect any improvement.) The pericardium was then explored (1) in the left fifth space, just external to the mammillary line; (2) half an inch nearer the median line; (3) in the right fifth space, an inch from the edge of the sternum. Deeply blood-stained fluid was found at each point. The pericardium was then aspirated by Mr. Mayo Robson in the left fifth space, in the nipple line, eight ounces being obtained. The fluid deposited one-twelfth blood-cells. Next day (July 27) the resident surgical officer, Mr. Moynham, again aspirated, and although only three ounces were withdrawn, the pulse fell from 128 to 90. The improvement was as transitory as before. On the 28th there was marked "respiratory pulse." Aspiration was attempted on the right of the sternum, but, owing to a misapprehension, in the fourth space, and perhaps not sufficiently deep, only two drachms of the fluid were obtained. The author, like many others, had frequently observed in the post-mortem room that fluid in large quantity and free in the pericardial cavity was collected in three chief pools,—one in the right lower angle, another in the left, the third at the upper part of the cavity; and as it was evident that a needle passed too deeply into either of the lateral pools would merely pass harmlessly through the back of the pericardium into the lung, and as measurements showed that this point would, in a distended pericardium, be about two inches and a half from the surface, he, on August 8, passed an aspirating needle to a depth of two inches in the left fifth space, in the nipple line; twenty-two ounces of similar fluid was thus obtained. The chest was raised before the aspiration in order to bring more of the fluid to the lower part of the pericardium. The relief, though great, was again of short duration, as the patient had almost invincible anorexia and could take alcohol only. A failing pulse, rapidity of breathing, lividity, prostration, and lethargy compelled aspirations to be repeated on August 10, when four ounces and a half were withdrawn; on the 11th three ounces and a half, and on the 13th, two ounces. By this time he was taking some food, and either reaccumulation was slower or the heart stronger, so that no further aspiration was necessary until August 23. Loud pericardial friction was heard for a few days after August 10. Compression râles were heard in the left lung overlying the pericardium on August 17. On the 22d he is described by Mr. E. B. Hulbert, house-physician, as "rambling, moaning, pallid, and wan; seems unconscious, but is easily roused for a few moments; excreta are passed into bed; radial pulse 100, scarcely perceptible; respiration 36; compression râles persist." Next day slow aspiration at a depth of two inches, a quarter of an inch internal to the nipple line, obtained in three-quarters of an hour forty-six ounces and a half. The heart was then felt grating against the needle, but its point being curved and carefully turned towards the left no harm was done. The pulse improved much; dulness disappeared from the right of the sternum; the compression râles were lost; but in three days he relapsed, and it was thought necessary to withdraw eight ounces; again on the 31st, five ounces and a half; on September 6, nine ounces; and on the 11th, at the thirteenth and last aspiration, two ounces of fluid depositing only one-twentieth its depth of red cells. On September 2 dry cupping of the præcordia was ordered to be done daily. Apparently this had a good effect; the fluid soon became evidently less; there seemed to be some present, however, even in January, 1891. The patient was in bed six months and in the hospital eight months, after which he was at a convalescent home for six weeks. —*Lancet*, November 24, 1891.

TREATMENT OF ACUTE CORYZA.

LEDERMAN, of New York, has found the following mode of treatment very beneficial during the congestive stage of an acute nasal catarrh. The nasal chambers are sprayed with any of the antiseptic solutions, Seiler's preferred, until they are sufficiently cleansed, and then the following solution is used:

℞ Cocain.,
Menthol, āā gr. xx;
Benzoinol, f℥ii. M.
Ft. solutio.

The feeling of fulness in the nose, associated with the dull frontal headache, is no doubt the result of extreme congestion. For the relief of these symptoms, cocaine has been used for a considerable period, but it has been found that its effect soon passes off, and the patient is left in the same uncomfortable position as before. To obviate this, menthol was added to the solution. Menthol is a local

anæsthetic, and, in combination with cocaine, it keeps up the local depletion and leaves a pleasant coolness in the nasal chambers, enabling the patient to breathe through the natural passages. Benzoinol is used in this solution as the menstruum, on account of its bland and unirritating qualities and freedom from unpleasant odor.—*Brooklyn Medical Journal*, December, 1891.

EXPERIMENTS WITH DIURETIN.

Dr. S. Pfeffer contributes to the *Centralblatt für die gesammte Therapie*, No. 8, 1891, an article on diuretin, which embodies observations made in the medical ward of Professor Drasche, of Vienna. Diuretin was given in about forty cases, the daily dose being seventy-five grains, rising in several cases to one hundred and fifty grains. As a check upon the observations, syrup of orange was given. The diseases in which it was tested were cardiac dropsy, acute and chronic nephritis, pleurisy, tuberculosis of serous membranes, and cirrhosis of the liver.

In cardiac dropsy the remedy proved to be an excellent diuretic, acting very quickly. Even if at times at the beginning the dropsy did not decrease, in spite of the passage of large quantities of urine, yet the threatening symptoms regularly improved, and in the majority of cases the dropsy also finally disappeared, so that patients could again resume their calling. Sometimes the diuretic action lasted two or three days after the remedy ceased to be given. The secondary symptoms noted were somnolence, dizziness, headache, and profuse diarrhœa. In healthy persons suffering with constipation, however, movements of the bowels or diarrhœa could not be obtained.

In acute nephritis, diuretin had no effect, but in the chronic form, especially in contracted kidney, favorable and even surprising results were noted; just as favorable results were obtained in cirrhosis of the liver, while in pleurisy there was no effect.

The measurement of the blood-pressure with Von Basch's sphygmomanometer shows that during the treatment with diuretin a rise of blood-pressure occurs in cardiac dropsy. Although in the few cases in which the two drugs have been tried comparatively digitalis has stood below diuretin, the latter cannot be looked upon as a substitute for digitalis. If digitalis is pre-eminently a heart remedy of unsurpassed value, diuretin is pre-eminently a "kidney remedy," with a certain action upon the heart, which is far below that of digitalis. With diuretin at our service, the resort to calomel in obstinate cases will be made more and more infrequently.

Dr. Schmieden (*Centralblatt für Klin. Medicin*, No. 30, 1891) has treated thirty-one patients with diuretin for a longer or shorter time since the summer of 1890. All the patients, with a single exception, suffered with dropsy in varying intensity. The results obtained were as follows:

In pure cirrhosis of the liver and in tubercular peritonitis, diuretin, as a rule, was entirely without effect.

In chronic nephritis its action was uncertain; in one-half of the cases it failed almost wholly, in the other half there was a moderate increase, between a third and a half of the volume previously passed. No conclusion as to the behavior of the drug in acute nephritis is warranted, owing to the fewness of the cases in which it was used, yet it can be said that diuretin has a favorable effect in a number of kidney affections. In a given case its effect upon diuresis, which seems to consist in a direct influence upon the secreting kidney parenchyma, cannot be predicted with certainty.

Diuretin is an excellent diuretic in the majority of heart-diseases, both valvular and vascular diseases (arterio-sclerosis). Among the cases of heart-disease, those complicated with chronic nephritis were moderately benefited. The pure heart lesions offer the best chances; in these cases an extraordinarily large and persistent flow of urine was excited, and the organism was in a short time freed from the fluid.

A regulating influence upon the activity of the heart and upon the blood-pressure is not recognizable with certainty. On the contrary, in a not inconsiderable number of cases, an increase in the frequency of the pulse, with a disposition to arhythmia, was observed, and finally made it necessary to stop the remedy.

Diuretin increases the secretion not only of the water, but of the urea and of the salts of the urine, so that, in spite of the large increase of volume, the specific gravity of the urine is raised.

The secondary symptoms noted were headache, vomiting, and violent diarrhœa.

Persistent diuresis after the remedy has been stopped is no more likely to follow the use of diuretin than the use of calomel.

Dr. Kress (*Münchener Med. Wochenschrift*, No. 38, 1891) has also studied the action of

diuretin. His material consisted of twenty patients, of whom seven were suffering with nephritis, eight with heart-diseases, two with pleurisy, two with disease of the liver, and one with pulmonary tuberculosis and dropsy.

Kress concludes that diuretin is a powerful and true diuretic, increasing both the watery and the solid constituents of the urine. Its effect is due to a direct, non-irritant action upon the parenchyma of the kidney. It exhibits its diuretic action best in acute and chronic diseases of the heart and kidneys, but especially in acute nephritis and pure valve lesions. Chronic nephritis and weakness of the heart-muscle were favorably influenced, while in pure serous effusions and in tuberculosis in the stage of dropsy, no good result is to be hoped for from diuretin.

Diuretin can be taken for a long time and in large doses—as much as two drachms a day—without producing any symptoms dangerous to life. Its diuretic effect is at least not weakened by repeated administration in the same disease.—*Deutsche Medizinal-Zeitung*, October 19, 1891.

A NEW METHOD OF OPERATING ON GRANULAR LIDS.

Dr. Eugene Smith (*The Physician and Surgeon*, vol. xiii., No. 10) describes an operation for those cases of trachoma characterized by isolated trachomatous bodies and "frog-spawn-like" deposits in the retrotarsal folds.

The conjunctiva covering the isolated bodies is incised across the top of *each* body, and the contents of each nodule are squeezed out with an ordinary pair of forceps (resembling an iris-forceps without teeth, but having an unusually long curve).

In cases characterized by redundant gelatinous tissue, Dr. Smith slits the conjunctiva throughout the entire length of the oculo-palpebral fold. The curved forceps is then utilized in a squeezing and stripping motion, and the gelatinous bodies are forced out.

In the diffuse variety of trachoma, Dr. Smith scarifies the tissue at the edge of the tarsal cartilage, and afterwards compresses the region with a pair of entropion forceps, one blade being introduced into the retrotarsal fold and the other in front of the cartilage. This manœuvre does not express any granulations, but in the opinion of the author assists in the process of cure.

Dr. Smith recommends his modifications very strongly, provided they are applied in suitable cases. The small, nearly imperceptible linear cicatrices which follow are unimportant and soon pass away.

SURGICAL TREATMENT OF GRANULAR LIDS BY "GRATTAGE."

In a paper read before the Medical Society of the County of New York in September, 1891, and published in the *New York Medical Journal* for October 24, 1891, Dr. John E. Weeks discusses the surgical treatment of granulated lids, and reports a number of cases greatly benefited by "grattage."

He divides trachoma into three stages: The first, or the period of the formation of granulations; the second, coalescence of the granules and the thickening of the tissues; and the third, the conversion of the parts into cicatricial tissue. The operations discussed by Dr. Weeks are suited to the first and second of these stages. He divides these into,—

1. Partial removal by excision,—*i.e.*, excision of the folds of the fornix conjunctivæ with scissors.

2. Partial removal by expression,—*i.e.*, exposure of the affected areas and squeezing out the follicles with specially-devised forceps,—for example, the fenestrated forceps of Prince, the concave forceps of Noyes, the roller forceps of Knapp, or the spoon-shaped forceps of Gruening.

3. Destruction of the tissues by the use of electrolysis. This is the method requiring the special apparatus which has been devised by Mr. Lindsay Johnson.

4. Removal of the affected tissue by brushing it with a stiff-bristle brush. An ordinary tooth-brush in which the bristles have been cut down is utilized, and the trachoma masses brushed out by rubbing it briskly over their surfaces.

5. Destruction of the trachoma granulations by the use of the galvano-cautery. By this method each follicle is destroyed with the point of an electrode.

6. Removal of the granulations by means of scarification and rubbing with a brush, and the introduction of a strong germicide.

This is the operation which Dr. Weeks advocates, and which he describes according to the method pursued in Abadie's clinic in Paris:

The patient is anæsthetized. If the palpebral fissure is narrow, or the lids have been thickened and curved by the progress of disease, a canthotomy is performed. The margin of the lid is then grasped with a catch-dressing forceps made for the purpose,

the axes of the blades being held parallel to the margin of the lid. One blade of the forceps is placed on the conjunctival surface and the other on the surface of the integument, both being at the margin of the lid. The lid is now everted, the fornix conjunctiva fully exposed to view, and put on the stretch by rolling the lid over the blades of the forceps. All the diseased portion of the conjunctiva is now scarified by making incisions placed close together and parallel to the margin of the lid. These incisions are united by a few transverse incisions. The depth of the incisions depends upon the depth of the trachomatous tissue. The back of the scalpel is sometimes run over the cut surface to express any trachomatous bodies which may be easily dislodged. The exposed surface is then thoroughly scrubbed with a tooth-brush, which carries a solution of the bichloride of mercury (1 to 500). All of the affected areas are in like manner exposed, scarified, and scrubbed. The lids are then freed from clot and the eyes are bandaged with an antiseptic dressing. After twenty-four hours the bandage is removed and the conjunctival surface is rubbed with a pledget of absorbent cotton which has been dipped in a solution of sublimate. The rubbing is repeated each day after the operation for two weeks, except in cases where there is considerable reaction, when the applications are made less frequently. Quite intense œdema of the lids may follow the operation. Usually, however, the reaction is slight and the improvement is marked and rapid.

Dr. Weeks up to the present time has operated on forty-one eyes in twenty-two individuals. In thirty-nine eyes the method employed was "grattage." Of the twenty-two individuals operated upon, two disappeared soon after the operation; seven (twelve eyes) were much improved, and thirteen (twenty-five eyes) were cured. "Grattage" combined with the method of expression is suited to the second stage of trachoma; it may also be employed in the first stage.

TREATMENT OF GRANULATIONS BY MEANS OF "BROSSAGE."

In the report of the Ophthalmological Section of the Spanish Medical Congress, held July, 1891 (*Archives of Ophthalmology*, vol. xx., No. 4), Osio, of Madrid, recommended "brossage" with a hard tooth-brush, after eversion of the eyelids and scarification of the conjunctiva. In order to thoroughly evert the eyelids he employs a forceps specially devised for this purpose.

In the discussion which followed Lloret, of Valencia, endorsed the treatment. Both of these surgeons considered jequirity and the excision of the conjunctival cul-de-sac dangerous and inadvisable methods.

Fernandez, of Havana, although believing that all the methods of treatment suggested against granulations are unphysiological, inasmuch as they result in the destruction of conjunctival epithelium, none the less affirms that excision of the cul-de-sac, while a defective method, is free from danger. He considers Knapp's treatment, by pressing out the trachomatous bodies with a roller forceps, a conservative measure, but had not as yet formed an opinion as to its efficacy. In spite of the fact that "brossage" destroys the epithelium, Fernandez accepts the procedure because, in his opinion, it is the only one which certainly destroys the granulations.

THE TREATMENT OF CONJUNCTIVITIS WITH CRUDE PETROLEUM.

Trousseau (abstract in the *Centralblatt für die Gesammte Therapie*, October, 1891) thinks that petroleum should receive a wider use in the treatment of certain types of conjunctivitis.

It is weaker than bluestone and nitrate of silver, but has the advantage that the application is without pain, does not produce great reaction, and is well borne by an inflamed cornea. The petroleum is applied to the conjunctiva, and especially to the conjunctival sac, with a brush. In granular conjunctivitis a tooth-brush is used to rub the drug into the tissues. In ordinary catarrhal conjunctivitis the conjunctiva quickly assumes a satisfactory appearance. If the secretion is a decidedly muco-purulent one, the process is much more tedious, and at times the drug fails entirely. Very good results have been secured in follicular ophthalmia. In true trachoma the results have been various, sometimes good, and at times quite negative, a fact, however, which is equally true of the classical remedies. The petroleum is, therefore, indicated when other materials are not readily borne; moreover, it prepares the mucous membrane for the action of more decided astringents.

In the discussion Meyer stated that for some months he had made use of petroleum without evil results, and had found that in certain types of granulation of the conjunctiva he had satisfactorily prepared the way for the use of

other remedies by the employment of this drug.

Millée also noted the freedom from pain which followed the use of petroleum, and reported some cases of Fruehjahr's catarrh in which this drug had produced astonishing results.

TREATMENT OF BLENNORRHŒA OF THE CONJUNCTIVA.

In the Session of the Ophthalmological Society at Heidelberg, held in September of last year, KNEIS reported excellent results from the internal administration of the balsam of copaiba in blennorrhœa of the conjunctiva, ordered at the commencement of the disease and at the time that the local treatment was put in operation. The effect of the medication began to be manifest on the third or fourth day after its administration. In two cases the disorder assumed a benign aspect, in spite of the fact that at the beginning it had been very severe and menacing. In certain cases of acute trachoma he has also used the balsam of copaiba, when the indications for therapeutics were analogous to those which have just been described.

THE TREATMENT OF SCROFULOUS INFLAMMATIONS OF THE CORNEA AND CORNEAL ULCERS WITH IODOL.

In the *Centralbl. f. prakt. Augenheilk.*, October, 1891, Thomalla describes the excellent results which he has obtained with iodol in the treatment of the diseases mentioned in the title.

He has employed this drug in cases where the corneal ulceration developed from a phlyctenule, and the conjunctiva was so swollen that it was well-nigh impossible to separate the lids; in corneal ulcers whose floor and borders possessed a grayish-yellow or cheesy infiltration and which were unassociated with the development of reparative vessels; and, finally, in those ulcers in which reparative pannus had arisen. Even in severe cases, after eight days, distinct improvement was visible, and cicatrization of the ulcer was secured in about three weeks.

No doubt iodol acts as calomel does in an antiseptic and stimulating manner, but has the additional advantage that under its influence the purulent secretions are diminished. For this reason the author suggests that it might be useful in the various types of blennorrhœa.

Thomalla's results have been obtained not alone in cases which were at the same time under the influence of general medication, but also when the drug was used without such assistance. He is of the opinion that finely-powdered iodol is suited to a great number of inflammatory corneal diseases, and quite equal in efficiency to calomel, possessing the great advantage that it may be employed when the patient is at the same time taking some form of iodine, under which circumstances the mild chloride of mercury is distinctly contraindicated.

THE TREATMENT OF HYPOPYON-KERATITIS.

In a paper read before the Southwestern Ohio Medical Society, and published in the *Cincinnati Lancet-Clinic*, November 7, 1891, Dr. S. C. AYRES advocates in the early stages of hypopyon-keratitis flushing the conjunctival sac with a solution of corrosive sublimate 1 to 2000, then dusting finely-powdered iodoform on the cornea and closing the eye with a compress soaked in an antiseptic fluid. In the fully-established disease he performs paracentesis of the cornea, being guided chiefly by the amount of pain; and in young people and those who are feeble he prefers the aid of an anæsthetic in the performance of this operation.

When there is extensive infiltration of the central portion of the cornea, in addition to the use of antiseptic collyrium, he scrapes the floor of the ulcer with a spud before dusting on its surface the powdered iodoform. Atropine is used with good effect. Dr. Ayres refers to the cauterization of the ulcer with pure carbolic acid and also with nitrate of silver, and to the use of the actual cautery, but thinks that scraping the ulcer with a spud is a measure at once efficient and easy of performance. He is particularly partial to the use of iodoform, either with or without the previous use of the curette. If infection comes from the tear-sac this should be freely opened, its contents evacuated and its surface flushed with the bichloride solution.

PRESSURE-INUNCTION IN THE TREATMENT OF CERTAIN CHRONIC HYPERPLASTIC CONDITIONS OF THE EYE.

G. STERLING RYERSON (*Archives of Ophthalmology*, vol. xx., No. 4) proposes to treat dense corneal opacities, interstitial deposits, deposits on the capsule of the lens from iritis, opacities of the vitreous, and stubborn scleritis by means of mercurial inunction combined with pressure. His method is the following:

An ointment of calomel (gr. xxx. = ℥i) is prepared and applied freely to the closed lids, and, in cases of corneal opacity a small quantity is inserted in the conjunctival sac. A pad of absorbent cotton is then applied and held in place by a number of turns of an elastic flannel bandage. This dressing is worn twice daily for several hours at a time. According to the author, salivation has never followed this treatment, and although the improvement is slow and the method must be pursued for a number of months, the results are good.

REMARKS CONCERNING THE OPERATION OF CATARACT.

In a paper contributed to *Deutschmann's Beiträge zur Augenheilkunde*, III. Heft, 1891, Professor O. Haab, of Zurich, gives a number of very practical suggestions in regard to the preparation of an eye upon which the operation of cataract is to be performed.

In his own series of cataract operations he has been singularly successful in preventing any loss of cases through suppuration, and believes that it is only through the strictest antisepsis that ophthalmic surgeons will reduce the liability of this complication.

He points out the well-known fact that it is by no means a simple matter to secure complete antisepsis in eyes, and thinks, from an examination of the various antiseptic methods which are described in ophthalmological literature, that there is an absence of attention to detail in regard to the management of the tear-passages, believing that from this source the greatest danger arises. Since he has made it a practice for a couple of days before a cataract extraction to wash out the lachrymonasal duct by means of a modified Anel's syringe, and since by this procedure he has frequently found stoppage of these passages, the importance of the caution has presented itself to his mind with great force. In many of the cases there is no special symptom which indicates the complication, because very often the canal is simply narrowed, indicated by the fact that a little of the fluid trickles through the nose, while the greatest quantity of it is regurgitated through the upper canaliculus. The question then presents itself whether in cases of this character the ordinary treatment with sounds shall be undertaken, or whether the tear-sac shall be removed. In most of the instances this would not be possible, because sufficient time will not be present. The use of sounds, moreover, does not insure against infection from the nose or from the tear-sac.

For some time Haab has pursued the following plan: For several days before the operation he irrigates the lachrymal sac with a sublimate solution, 1 to 1000, and closes both the upper and the lower canaliculus on the day before the operation by introducing for five millimetres into each canal the wire of a galvanocautery, connects the battery, and produces a severe cauterization of the mucous membrane. By this means a complete closure is produced, and the connection of the tear-sac and the conjunctival cul-de sac is annulled. He has never seen this procedure produce dacryocystitis or other disturbance, even if it was a permanent closure. Eyes treated in this way do not secrete tears freely, and as a rule remain free from inflammation, exactly as after extirpation of the lachrymal sac. It is very interesting to observe the opposite eye when there has been stenosis of the passages on both sides. On the fifth or sixth day after the operation, both eyes having been bandaged, the eye unoperated upon shows quite a collection of mucus, or purulent secretion, while the eye which has been operated upon remains quite free from abnormal secretion.

He dwells particularly, also, upon the preparation of the conjunctival cul-de-sac in the eye upon which the operation is to be performed. He cleanses the eye immediately before the operation with an absorbing substance, wrapped around a forceps, which has been dipped in a sublimate solution, 1 to 1000, particularly in the upper and lower retrotarsal folds and their neighborhood, and also in the region of the caruncle and the plica semilunaris. The lids and the eyeball also receive particular attention. He has never seen any evil results follow, and the eyes thus treated heal quite as rapidly as others which have been cleansed in a much more moderate manner.

In addition to the closure of the canaliculi, and this very decided cleansing of the conjunctival cul-de-sac, Haab resorts to a third procedure. After he has finished the operation he fills the entire inner commissural angle with very finely-powdered iodoform, and dusts a thin layer of this drug upon the wound and in the lower conjunctival cul-de-sac. He fills the angle with the iodoform in order to absorb any secretion which may be present in spite of the closure of the canaliculus. Instead of using iodoform at the inner angle of the eye, Haab has also employed dermatol, calomel, or a sterilized indifferent powder, but thinks nothing is so good and so readily borne by the eye as iodoform.

Haab has used a preparatory bandage over

the eye for a number of years, which formerly was dipped in salicylic acid solution, but now is wet with the bichloride. According to his belief, catarrh of the conjunctival cul-de-sac, which is so frequent in old people, may be quite free from danger if the case is managed upon the principles which he advises.

THE PREVENTION OF SUPPURATION AFTER CATARACT EXTRACTION.

NUEL (abstract in the *Centralblatt für die Gesammte Therapie*, October, 1891) deems it profitable to investigate the susceptibility of an eye to suppuration before proceeding to cataract extraction. For this purpose he closes the eye with a bandage for two days preparatory to the operation. If there is susceptibility, and a muco-purulent secretion results from the bandaging, it will be still greater if the cataract extraction is performed. If, on the other hand, an eye withstands this test and remains dry, there is no danger in operating.

THE TREATMENT OF INFANTILE GLAUCOMA (HYDROPHTHALMOS) BY SCLEROTOMY.

THEODOR ARNOLD (*Deutschmann's Beiträge zur Augenheilkunde*, III. Heft, 1891) reports the result of the treatment by sclerotomy of twenty cases of glaucomatous eyes occurring in children in the service of Professor Haab, in Zürich. The first case was operated on in October, 1881, and the results, up to June, 1891, are recorded.

In twenty eyes fifty-five sclerotomies were performed. Among the twenty eyes treated by sclerotomy there were fourteen, or seventy per cent., good results, and six, or thirty per cent., failures. If four cases, with six operated eyes, in which from the beginning there was an unfavorable prognosis expressed, are omitted, the favorable results amount to one hundred per cent. Should two cases be separated, one of which died some months after the operations, and the other one having been under observation for only ten months, the reporter still claims fifty-five per cent. of successes.

His final conclusion is that, in contrast to all other methods of treating congenital hydrophthalmos, sclerotomy furnishes the most lasting and the best results. In the performance of the sclerotomy during the first operations, De Wecker's sclerotome was used; later, however, this was substituted by a broad Graefe cataract-knife. The incisions were so made that the entrance of the knife, as well as its exit, was placed quite in the periphery of the anterior chamber, close to the ciliary insertion of the iris. By this means the incisions were situated, according to the depth of the anterior chamber, two to four millimetres from the corneal border.

According to circumstances, either chloroform or cocaine anæsthesia was employed. In most of the cases chloroform anæsthesia is preferred, in order to avoid any straining and consequent prolapse of the iris.

OPERATIVE TREATMENT OF RETINAL DETACHMENT.

HIRSCHBERG (*Centralbl. für Prakt. Augenheilk.*, October, 1891) describes a delicate detachment of the retina in the outer and upper portion of the fundus oculi, which occurred in a myopic woman of 27 years of age. Treatment with pilocarpine, rest and a compressing bandage were tried. At first there was improvement, but afterwards a relapse occurred, and an operation was determined upon about two years after the woman originally came under observation. This was done as follows:

The patient was seated upon a chair, and an assistant steadied the head against his breast and gently drew the eyelids away from the globe. The surgeon seized the conjunctiva in the outer and upper portion with a pair of forceps, as much as possible behind the equator, and entered a Graefe cataract-knife deeply into the interior of the eye, turned the instrument ninety degrees, and withdrew it. For a moment the black appearance of the choroidal opening was visible. The conjunctiva in the immediate neighborhood of the opening was then drawn very carefully away from the globe. This manipulation, which produced a suction effect, caused the outer and upper quadrant of space under the conjunctiva to be distended, in the form of a blister, with the fluid which had previously been contained beneath the retinal detachment. The eye was bandaged and the patient placed in bed for twelve days.

Perfectly normal healing took place. The patient was able to read the finest print with this eye just as well as with its fellow, and a perfectly normal visual field was obtainable. Spontaneous myopic retinal detachments, especially such as are somewhat hill- or bladder-shaped and unassociated with evident vitreous opacities, offer the greatest hope for operative interference.

SKIN-GRAFTING UPON THE EYELID BY THIERSCH'S METHOD.

Dr. Samuel Theobald (*The American Journal of Ophthalmology*, October, 1891) describes two cases of successful skin grafting by Thiersch's method. The grafts were removed with a small scalpel from inside of the forearm, the skin from which they were taken having been washed with soap and water, then with a sublimate solution, and lastly with a solution of common salt. While the wound was being prepared for their reception, the grafts were placed in a warm, unsterilized solution of salt. The granulated surfaces of the grafts were in part shaved off and in part scraped, and the bleeding surfaces wiped dry with absorbed cotton dipped in a warm salt solution. After the grafts were in position they were covered with rubber protective, and held in place under a pad of absorbent cotton and a bandage.

The grafts were applied in one case to supply the loss of tissue resulting from a burn by sulphuric acid, and in the other after the removal of an epithelioma of the lower lid. Dr. Theobald recommends skin-grafting by this method, and points out that the successful outcome of these cases was noteworthy because both patients were treated as outpatients, and the antiseptic precautions were very imperfect. In one case, that of the sulphuric acid burn, eight grafts were placed in position, and all of them, except one, were successful. In the other case, of the three grafts used, two were successful, and one partly so. When the patient was last seen the grafts had united firmly, but it has not been possible to communicate with him since, and hence the ultimate effect is unknown.

HYOSCYAMINE AS A MYDRIATIC.

S. D. Risley, in a brief note read before the American Ophthalmological Society, reiterates the conclusions formulated in 1881 regarding the great value of hyoscyamine when employed as a mydriatic for the correction of refractive errors, especially when these are associated with retino-choroidal irritation.

Since these original observations were made he had noticed marked irregularity in the action of the drug, in many instances the returning accommodation having pursued the same course in all respects as after the use of atropine. In some of these cases the solutions dispensed by the pharmacist had also proved very irritating to the conjunctiva. Inquiry elicited the fact that these irritating solutions had been made from an amorphous, brownish mass, whereas the early preparation used was a transparent crystalline salt.

Quoting Merck's *Bulletin*, he showed that this amorphous mass is a mixture of the mydriatic alkaloids as they occur in nature in the *Solanaceæ*,—viz., the basic salts of atropine, duboisine, daturine, and hyoscyamine. Quoting the investigations of Will, he pointed out that hyoscyamine is closely related to the other mydriatics, with which, indeed, it is isomeric; that by proper manipulation hyoscyamine alone can be procured from belladonna, but that it is readily converted into atropine by treatment with an alkali or by heating to its melting-point,—facts not taken into consideration in the methods often employed in manufacture. The conclusions were reached that in employing hyoscyamine only the skilfully-prepared crystals should be selected, and in dispensing these considerable degrees of heat should be avoided and the solutions should be filtered through strictly neutral paper.

THE LEITER COIL IN THE EARLY STAGES OF MASTOID-DISEASE.

In the *New York Medical Journal* of October 10, 1891, Dr. Gorham Bacon records his very great satisfaction in the increased use of this means of combating inflammation by mediate irrigation. The thin leaden pipe is conveniently coiled to give close contact, and requires little to secure fixation, and continuous application of any desired temperature can be maintained merely by siphon action. Dry heat can be as readily applied as cold, or heat and cold can be alternated. The convenience of the method has doubtless struck any one who has visited the Heidelberg Ophthalmic Institute, where it is in constant use; and its warm advocacy by Politzer (Text-Book, p. 361), Bacon, and others should secure it wider trial.

THE ABANDONMENT OF DRAINAGE AFTER MASTOID TREPHINING.

In a most interesting and valuable paper which the American Otological Society insisted on hearing in its entirety, in spite of the author's protest, at its late meeting, Dr. Clarence Blake gave his results in the large series of recent cases of mastoid suppuration upon which he had operated, and advocated the omission of routine drainage after trephining. The wound was kept open by probing for a few days, irrigations or other treatment used only when demanded, and as a result the promptness

of healing, in cases that generally drag on for months, was very noteworthy, several being practically entirely well inside of two weeks.

CAMPHOR-MENTHOL IN CATARRHAL DISEASES.

In the *Jour. Amer. Med. Assoc.*, October 24, 1891, Dr. Seth S. Bishop gives his very favorable experience with this compound, the liquid resulting from rubbing together equal parts of camphor and menthol and diluting with a mineral oil. It gave excellent results in relieving the swelling and irritability of acute nasal catarrhs, improving the character of the discharge, and by a few repetitions securing the relief of the stenosis and obviating the operative measures which had seemed unavoidable.

Its effect in laryngitis has appeared as happy, and its injection through the catheter into the Eustachian tube and tympanum has been attended by only good results. For the latter purpose a solution of three to five per cent. is as strong as is safe; most noses and larynges will bear ten per cent., while in marked hypertrophic rhinitis, with copious discharge, even twenty-five per cent. is well borne. "Finally, camphor-menthol contracts the capillary blood-vessels of the mucous membrane, reduces swelling, relieves pain and fulness of the head or stenosis, arrests sneezing, checks excessive discharge, and corrects perverted secretion."

LYSOL IN DISEASES OF THE EAR.

Dr. Hano is quoted by *Les Nouveaux Remèdes* of October 24, 1891, as having employed lysol in aural practice, using a one per cent. solution for cleansing irrigations, often preceded by cocaine on account of its irritative effect. Stronger solutions were employed in combating otomycosis, weaker ones for gargling, or use in the nares, while a moist gauze containing two to five per cent. was utilized for dressings.

STYRONE IN CHRONIC SUPPURATIONS OF THE EAR.

In the *Archives of Otology* for July, 1891, Dr. Spalding reports on the value of styrone in the obstinate cases of this affection, especially those complicated by attic-inflammation and perforation in Shrapnell's membrane. The fluid styrone, which is much less costly than the crystalline, was found efficacious, being used in alcoholic solution of two to five per cent., diluted at the moment with water or glycerin. Cleansing by syringing and mopping with cotton should, of course, precede its application, which is best made with the moistened pledget on the cotton-carrier. Boric acid insufflation may follow.

PYOKTANIN IN EAR-DISEASE.

A careful series of experiments in the clinic and the laboratory have been made by Rohrer, of Zurich, and the results as published in the *Archiv für Ohrenheilkunde* for March indicate the inadequacy of the yellow, but a distinct value of the blue aniline in both series of studies. Brief study of Hexa-ethyl-violet confirms Stilling's claim that this is the most valuable of these agents. The control-tests showed no superiority over the peroxide of hydrogen, which has long been the stand-by with him, as with the reviewer, who can report a small series of obstinate cases in which the addition of the pyoktanin to the routine treatment by peroxide and boric acid has been followed by prompt cessation of the suppuration, previously uncontrolled. No single means is likely to succeed in more than a fraction of the bad cases; but there is no incompatibility in the employment of several of these disinfecting and curative agents, that the combined efficacy may be obtained.

ON THE DETECTION OF RUPTURED BLADDER.

Weir makes a further contribution to Cabot's well-known method of diagnosticating intraperitoneal rupture of the bladder (*Boston Medical and Surgical Journal*, vol. cxxv. No. 19). Cabot's method consisted in throwing a known quantity of fluid into a previously empty bladder. If this viscus is uninjured, the same quantity should be returned again through the catheter. To be of positive service such a test should, according to Weir, be applied several times and with a decided amount of distention of the bladder. The author considers that this test may further be improved by combining rectal and vesical distention, with a known quantity of water for the latter viscus. The bladder outlined in this way above the pubis is only to be confounded with extravasation occasioned by the test, and this is controlled by the measurement of the fluid finally emptied from the bladder.

If dulness on percussion above the pubis occurs, and the fluid withdrawn from the bladder is lessened in quantity, an extraperitoneal rupture can be inferred. If no dulness or recognized vesical distention above the pubis takes

place, but there is diminution of the injected fluid, intraperitoneal or subperitoneal postero-inferior rupture can be assumed.

If the latter exists, a rectal examination made before and subsequent to trying the test will show increase in the extravasation in that region, as was proved by the author in a case under his charge. Where the site of rupture cannot be determined with accuracy, suprapubic incision should be made, when any slight infiltration exterior to the bladder will be revealed. If this incision does not throw light on the case, the bladder should be opened sufficiently for digital and ocular inspection.

FRACTURE IN THE UPPER THIRD OF THE FEMUR.

ALLIS (*Medical News*, vol. lix., No. 21) carefully reviews the mechanism of fracture in the upper third of the femur exclusive of the neck. He apparently shows that the treatment ordinarily adopted in such cases cannot possibly produce the best results, and terminates his paper by the following conclusions: After fracture of the shaft, the fragments are bound together by a hinge. The hinge will be short if the vulnerating force was only sufficient to break the bone. If the hinge is short, overlapping can only occur to a very limited degree. In all such cases the "shortening" will be due to an angular displacement. If the vulnerating force is greater than necessary to merely fracture the bone, the unexpended force will tear the hinge freely. When the hinge is loose, overlapping, with or without angular deformity, is possible. The shorter the hinge the greater will be the control of the upper fragment, through the agency of the lower. Traction on the lower fragment, under all circumstances, is incapable of restoring the long axis of the broken bone. If the hinge is short, traction will draw down the upper fragment, but cannot efface the anterior angular tendency. If the hinge is long, traction will exert but little influence upon the upper fragment. Traction in the oblique direction has no advantage over horizontal extension. The so-called "weakness" after fracture of the femur is not due to deficient bone-repair. "Weakness" is greatest when due to angular deformity, with rotation of fragments. Angular deformity, with rotation of fragments, compels both hip and knee to assume abnormal relations to the trunk. Shortness, due to overlapping, *without* angular deformity or rotation of fragments, is no barrier to heavy, manual labor. Treatment directed to the lower fragment is the probable agency in causing rotation in the lower fragment. No surface treatment can *insure* a useful limb. Osteotomy has corrected many a faulty union after months of wasted time. The conversion of a sealed (simple) fracture into an exposed (compound) one offers the only possible means for accurate diagnosis, and the only possible method of rational treatment. Patients and surgeons who stop short of this procedure must compromise with best results.

EARLY OPERATIVE INTERFERENCE IN ACUTE PERITONITIS.

In a paper upon the question of early operation in acute peritonitis, LYDSTON (*Western Medical Reporter*, vol. xiii., No. 10) states that there is no such thing as primary idiopathic peritonitis. He believes that the peritonitis occurring in children apparently perfectly healthy up to the time of the attack is, at least in many cases, due to traumatism. In young subjects the strength and thickness of the abdominal walls are not proportionate to the responsibility of protecting the viscera; moreover, the perineum is a *locus minoris resistantiæ*, and injuries which are so slight as to be innocuous to the adult may give rise to peritonitis in children. Severe strainings at stool, blows upon the abdomen, comparatively slight violence exerted upon the stomach when full,—in fact, injuries so slight that the child does not complain of them,—may give rise to peritonitis.

Even though the trauma be so slight as to leave no trace which is visible at post-mortem, it may be sufficient to light up peritonitis.

Typhlitis and perityphlitis are also far more frequent in children than is generally believed, and in them these inflammations have a pronounced tendency to general extension. The author has formulated his views of acute peritonitis as follows:

1. The existence of acute idiopathic primary peritonitis remains to be placed.

2. The majority of cases of so-called idiopathic peritonitis in children will be found, upon inquiry, to be traumatic.

3. Slight injuries of the abdominal contents are relatively more dangerous in children than in adults.

4. Acute peritonitis in children, while apparently idiopathic, is often secondary to perityphlitic inflammation, which runs a rapid course, and extends to the general peritoneum without the intervention of appreciable local changes.

5. The profound prostration and cardiac inhibition characteristic of peritonitis are, in a great measure, incidental (1) to tension of the

peritoneum produced by inflammatory products, with a consequent reflex inhibition of the heart, and (2) mechanical interference with the heart's action.

6. Surgical interference is indicated in all severe cases of general peritonitis and in cases of localized suppurative inflammation, or in cases of perityphlitic origin, whether due to foreign bodies or not.

7. There is every indication present for operation, and no logical objection to it. The operation is almost invariably palliative, if not curative.

8. Operation in no sense impairs the chances of recovery. *Per contra*, it enhances them to a great degree.

9. No case should be allowed to die without operation, unless already *in articulo mortis*.

10. It is not necessary to make a large incision, except in cases in which perityphlitic abscess is known to exist, which is rarely the case in children. If perityphlitic abscess exist and is recognized before operation, the incision should be made at the most favorable point, which in the majority of cases is the typical line for ligation of the common iliac, as pointed out by Murphy and Lee. In by far the majority of cases in children a simple median exploratory incision, with flushing of the abdominal cavity, is sufficient.

HIP-JOINT AMPUTATION IN SARCOMA OF THE LEG.

SCHULTZ records the case of a twelve-year-old child who suffered from swelling of the leg. This was first treated by curetting with a sharp spoon. The tumor recurred *in loco* and was accompanied by great pain, for the relief of which amputation of the middle third of the thigh was performed. Ten days later the amputation wound was found to be infiltrated with sarcomatous growth, and hip-joint amputation was performed. The wound healed kindly. About three months after this the other leg became involved, and the patient perished from recurrence in the lung.

As a result of study of sarcoma of the leg, the author concludes that involvement of the bone is much more liable to run a malignant course than when the disease first appears in the soft parts. The bone sarcomata are amenable to local surgical treatment only in the earliest period of development. In all other cases amputation must be performed, and if the disease is advanced, exarticulation is advisable. Under no circumstances in case of bone sarcoma is curetting justifiable.

CHLORIDE AND IODIDE OF ZINC IN THE TREATMENT OF GONORRHŒA.

Basing his results on an experience of a large number of venereal cases, GLENN (*Southern Practitioner*, vol. xiii., No. 10) concludes that the best means of arresting a discharge and preventing a relapse, and of accomplishing these objects in the shortest possible time, is the application of a mild solution of the chloride and iodide of zinc. He usually employs this solution in the strength of one-half grain of chloride and one grain of iodide to the ounce of water. If this causes irritation, the strength of the lotion is reduced. The injections are repeated three or four times a day. The painful symptoms disappear rapidly. The discharge lessens and soon ceases entirely and no relapses occur. The patient is discharged cured in two or three weeks. The reporter prefers a syringe with a somewhat long nozzle, and in old inveterate cases precedes his injection by a thorough irrigation of hot water. Reports of fifty cases treated in this way are appended to the paper.

NERVE-STRETCHING IN THE CURE OF ANÆSTHESIA AND PERFORATING ULCER.

A case of nerve-stretching for the cure of perforating ulcer, with concomitant anæsthesia, is reported by MCLEOD (*Indian Medical Gazette*, No. 10, vol. xxvi.).

The patient stated that a year before he came under observation he suddenly lost sensation in the toes of the left foot. Some weeks later he was wounded in the sole of the same foot. The wound sloughed and refused to heal. There was a deep sloughing sore in the ball of the foot and a small unhealthy looking ulcer was noted on the inner side of the second toe. The whole of the dorsum of the foot and the anterior portion of the sole were completely anæsthetic. This anæsthetic area extended on the anterior aspect of the leg as far as its middle third. The external popliteal and musculo cutaneous nerves were found to be thickened. After a fair trial of other means of treatment, without effect, these nerves were cut down upon and stretched. The results of operation were: 1, recovery of sensation over the anæsthetic area; 2, rapid cicatrization of the ulcers; 3, subsidence of the swelling and restoration of the skin to its normal appearance and texture. In this relation the point was emphasized that, in cases of localized peripheral neuritis,

stretching is most beneficial in the early stages. In the later stages, when the nerve becomes very much thickened, splitting is more serviceable.

PLASTIC OPERATION ON THE ŒSOPHAGUS AND TOTAL EXTIRPATION OF THE LARYNX.

HOCHENEGG (*Internat. Klin. Rundschau*, 5 Jahr., No. 46) reports a successful case of extirpation of the larynx for malignant growth followed by closure of the œsophagus by means of a plastic operation with the subsequent construction of an apparatus by which the patient could speak.

A hard, very slightly movable tumor was noticed in the laryngeal region. On laryngoscopic examination there was found to be epitheliomatous degeneration affecting the pyriform sinus, together with diffuse infiltration of the ary-epiglottic folds extending to the right wall of the pharynx. The tumor was first exposed by an incision running along the sterno-mastoid muscle. Tracheotomy was then performed, and some diseased glands extirpated together with a portion of the jugular vein which was adherent to them, and the larynx was completely removed together with the involved mucous membrane of the pharynx. This included the whole right wall of the latter cavity. The anterior wall of the œsophagus also required removal. There remained a strip of the œsophageal wall of the left side one-fifth of an inch broad. This was preserved for the purpose of preventing retraction of the œsophagus downward and of the pharynx upward. In order to form a posterior wall for the œsophagus, and also to prevent infiltration of the contents of the mouth into the deep cellular tissue, two lateral skin flaps were sutured to the remains of the œsophageal wall and to the cut edges of the pharynx. This formed a deep gutter, the greater portion of which was made up of skin. The trachea was sewed in front and laterally to the external skin wound; posteriorly it was secured to the anterior wall of the œsophagus, thus protecting the cellular interspace between the œsophagus and trachea. The patient recovered.

Some weeks later an anæsthetic was again administered and flaps of skin were taken from the lateral aspects of the neck for the purpose of closing the œsophagus anteriorly. The epidermal surfaces of these flaps were turned inward, the raw surfaces being covered externally by further transplantation. This operation was successful except for the formation of a small fistula, so that the patient was able to swallow food in a perfectly normal manner.

The next point was to enable the patient to speak. Since the cavity of the mouth was completely cut off from the trachea, an artificial larynx could not be applied. This end was attained by passing a tube containing a phonation apparatus along the floor of the nose. This tube was connected with a gas-bag which the patient carried under his arm. When he wished to speak, by pressing upon the gas-bag vibrations were set up in the phonation apparatus, and these were so modified by motions of the tongue and lips that he could be understood.

Stoerck in a similar case passed a tube containing a reed for the purpose of producing vibrations into the mouth in the interval between two teeth. This reed was connected with a gas-bag, and the patient could readily speak by starting vibrations on the reed.

OPERATIVE TREATMENT OF CHRONIC HYDROCEPHALUS IN CHILDREN

KARNITZKY (*Archives of Pediatrics*, vol. viii., No. 94) reports five cases of chronic hydrocephalus treated by puncture and withdrawal of the fluid contents. For this purpose the trocar and canula were used. The trocar should have a diameter of one-twenty-fourth inch and be absolutely clean. The depth of the puncture varies from two-fifths of an inch to two inches. The site selected is usually the lateral corner of the great fontanel. Very rarely the puncture is made in the lambdoid suture near the smaller fontanel, or at some specially prominent and fluctuating point. If, after removal of the stylet, the fluid does not flow, the instrument must be introduced more deeply, or withdrawn and another site selected for the puncture. The fluid should be withdrawn slowly and evenly. The amount withdrawn at one sitting varies from three to six ounces. If a larger quantity is removed, air may gain access to the cavity of the cranium and cause acute hyperæmia of the brain. If, during the operation, the pulse or respiration become irregular, surgical interference must be discontinued. After withdrawing the trocar the point of puncture should receive a light antiseptic dressing. In the five cases reported, permanent improvement is not noted in a single instance. In some the circumference of the head markedly diminished at first, and the general symptoms became much more favor-

able. The improvement, however, was temporary. In no instance was puncture followed by local or general bad result.

Bouchut adopted a somewhat similar treatment in cases of chronic hydrocephalus, but made his puncture by means of a capillary trocar introduced into the nostril at the side of the septum parallel to the line of the nose, and plunged through the cribriform plate of the ethmoid bone, being at the same time slightly inclined outward. By this means he removed in one case ten ounces of fluid. This child died. The same operation was repeated in another case, but without result.

THE VALUE OF BICHLORIDE OF MERCURY IN THE TREATMENT OF URETHRITIS.

BREWER (*International Journal of Surgery*, November, 1891) reiterates his confidence in the efficacy of bichloride of mercury in the treatment of urethritis. His method was as follows: At the first visit the patient was instructed in the proper use of a syringe, and was given a large amount of a solution of bichloride of mercury, varying in strength from 1 : 16,000 to 1 : 50,000, according to the sensitiveness of his urethra and the stage of the disease. This he was instructed to use twice daily, by taking ten injections in the morning and ten at night, holding each one in the urethra one minute to imitate as nearly as possible the result of irrigation. The patient was seen three times a week. As soon as the discharge lost its purulent character, bichloride was suspended and a mild astringent was substituted, preferably bismuth suspended in water. In the fifty-five cases treated in this way, five were not benefited, after an average employment of the method for seven days. In the remaining fifty cases, the average length of time necessary to effect a change in the discharge from pus to a thin watery secretion was a fraction over eight days. The discharge entirely disappeared on an average of twenty-one days. Epididymitis occurred in three of these cases and posterior urethritis was developed in two. The reporter very fairly states that these statistics are of little value from a scientific point of view, since the cessation of the discharge can by no means be considered as an index that the disease has been cured. He offers his conclusions not so much on the basis of these cases as upon a very large personal experience, and states positively that the judicious use of bichloride of mercury in cases of acute gonorrhœal urethritis is attended with better results in subduing the painful and disagreeable features of the disease than is any other agent. The recovery is more rapid and permanent, and the frequency of inflammatory complications is very greatly reduced.

LAPAROTOMY FOR INTESTINAL PERFORATION IN TYPHOID FEVER.

VAN HOOK (*Medical News*, vol. lix., No. 21), after a careful consideration of the question of operation in cases of intestinal perforation occurring in the course of typhoid fever, records three cases in which such an operation was performed.

The first case had a light attack of fever lasting about three weeks. During convalescence a relapse occurred. On the seventh day of the supposed relapse an enema of warm water was given for the purpose of making the bowels move. This was followed by several passages and by violent pain in the ileo-cæcal region, accompanied by profuse diaphoresis, coldness of the extremities, and an excessively pinched and anxious expression of the countenance. Temperature, 105° F.; pulse, 126. The pain ceased in a short time. In a few hours temperature ran up to 106° F., the pulse to 132, and the patient suffered from tympanitis and tenderness on pressure over the ilio-cæcal region. The abdomen was opened as soon as possible, and more than a pint of fluid fæces and exudate mixed with flocculent lymph was removed.

On exposing the small intestine numerous ulcers were seen, all the coils of the intestine were injected and dull looking, and the fæcal matter was freely circulating in the peritoneal sac. A perfectly-circular minute opening was found. This was closed by means of the Lembert suture, three rows being applied on account of the brittle condition of the gut wall. The peritoneal cavity was thoroughly cleansed out with hot sterilized water. The omentum was drawn over the injured coil of intestines and sutured to the mesentery, Douglas's cul-de-sac was drained and the remainder of the abdominal wound was closed. Great distention followed this operation. This yielded to enemata of sulphate of magnesium with glycerin and water. The patient recovered.

The second case developed symptoms of perforation and sinking upon getting out of bed during what was apparently the third or fourth week of typhoid fever. She was col-

lapsed and there was also liver dulness. The abdomen was opened seven hours after perforation occurred. The peritoneal sac was filled with thin, liquid, flocculent matter. On account of the patient's condition the operation could not be completed, the patient perishing a few minutes after she was taken from the table. The autopsy showed an oval perforation of the ileum eighteen inches above the head of the colon.

The third case exhibited on section a perforating ulcer twelve inches above the ileocæcal valve. The opening was closed by a double row of Lembert sutures. The patient lived seventeen hours.

The autopsy showed general peritonitis.

Of nineteen recorded cases of laparotomy for perforation by typhoid ulcers, there are four recoveries. In some of the cases of recovery the diagnosis is doubtful. In the great majority of cases the perforations were within two or three feet of the cæcum, usually in the ileum, rarely in the colon; hence this part of the bowel only should be searched. The perforation, when found, should be closed by a line of sutures placed parallel to the long axis of the bowel. These sutures should be interrupted. The abdominal cavity should be thoroughly washed out by means of a thick stream of sterilized salt solution at a temperature of 105° to 112° F.

In these cases the anæsthetic should be chloroform. The author draws from his study of the subject the following conclusions:

1. There is no rational treatment for perforation in the course of typhoid fever, except laparotomy.

2. The indication for laparotomy when perforation occurs in typhoid fever is imperative.

3. The only contra-indication is a moribund condition of the patient.

4. Collapse is often at least temporarily relievable by hot peritoneal flushing.

5. The stage of the fever is not to be considered as an indication or as a contra-indication for laparotomy.

6. The severity of the typhoid fever is alone not a contra-indication.

7. Early laparotomy offers the most hope.

8. The symptoms of peritonitis should not be awaited before operating.

9. The published statistics of laparotomy for this condition are strongly in favor of operation.

10. The technique, though not complicated, demands much thoughtfulness, acquired dexterity, great rapidity, and thoroughness.

Reviews.

INDIGESTION: A MANUAL OF THE DIAGNOSIS AND MODERN TREATMENT OF THE DIFFERENT VARIETIES OF DYSPEPSIA. By George Herschell, M.D. London: Balliere, Tyndall & Cox, 1892.

While it is true that headache, dropsy, and indigestion are merely the symptoms or surface play of organic or functional derangements of certain organs, it is, perhaps, impossible to write of any of them without regarding them as distinct diseases, in order that a clinical or therapeutical outline may be followed.

There have been many books published during the last few years upon subjects closely related or identical with that of which this one treats, so that any work of this character must stand comparison with a number of able monographs either in English, French, or German. We think that Dr. Herschell's book will compare favorably with any of these. He naturally begins with the consideration of normal digestion, and while he does not descend into the most minute details of these processes in their relation to physiological chemistry, he considers them sufficiently to place the practising physician in possession of the facts which are of practical value. Indeed, this portion of the work is written in such an elementary manner that, while useful to the physician, it could be read with benefit by many patients. Following this brief summary of normal digestion, the causes of indigestion are discussed, and all of the many agencies which may result in functional disorder of the organs which prepare food for assimilation, including heredity, age, anæmia, nervous diseases, and exposure to cold and wet, organic diseases of vital organs, and indiscretions in diet in the way of jams and sweets, are taken up seriatim. The symptoms of indigestion are naturally many, and it has been impossible for the author to consider them all.

The chapter upon the "Objective Examination of the Digestive Organs" is quite short, but will, doubtless, present to the average practitioner many points for consideration which have heretofore escaped him. Perhaps the most interesting portion of the book, however, is that devoted to the treatment of those very troublesome and common maladies included under the name indigestion. The department is divided into the hygienic, medicinal, and special treatment necessary for the various varieties of gastric disorder,

including the employment of the ferments used for peptonizing foods. This portion of the book also contains many practical hints as to the combination of drugs for the various diseases of which it treats. Prescriptions abound in it, there being for every prominent symptom some combination of drugs. Some of the abbreviations in the book are entirely unjustifiable, as on the last page, where "Pot. Bromide" stands for potassium bromide, and is set in such heavy-faced type that "he who runs may read."

At the close of the volume there is an index of the medical works, as well as the authors who have been quoted, and, finally, there is a third index, which is a general one for the entire book.

Dr. Herschell has written a little brochure —which has evidently not been intended as a complete *résumé* of the literature—of diseases of the stomach, which has collected within the last few years. We hope that the patients of the physicians who read this book may digest the pabulum which they receive with as good results as the author has digested the enormous literature upon functional diseases or disorders of the stomach.

FOODS AND DIETARIES: A MANUAL OF CLINICAL DIETETICS. By R. W. Burnet, M.D.
Philadelphia: P. Blakiston, Son & Co., 1891.

This book of Dr. Burnet's forms a very useful companion to that of Dr. Herschell's, which we have noticed in this issue of the THERAPEUTIC GAZETEE, discussing, as it does, most thoroughly the dietetics of disease. After the introduction, the diet for gastric catarrh, acute dyspepsia, and subacute and acute gastritis is carefully outlined, and this is followed by directions as to what foods the physician should prescribe in Bright's disease, diabetes mellitus, anæmia, scrofula, and allied affections, including pulmonary phthisis, aneurism, rheumatism, and gout. A brief account is given of the so-called Weir Mitchell treatment in respect to diet and rest. Under the head of "Diathetic Diseases" the foods which are to be taken or avoided in typhoid and other fevers are discussed.

Not the least interesting chapter is that upon "Diet in Diseases of Children," which, we think, might have been made with advantage a little more complete. So much has been written concerning the feeding of children, that the author would have done well to insert more than a few pages upon this subject. As it is, there are only ten pages devoted to it.

Chapter XVIII. deals with the use of alcohol, and is largely composed of the opinions of other physicians rather than those of Dr. Burnet. The summary which the author adds to this chapter is, however, of interest, in view of the attacks which have been made upon this drug, by certain clinicians, within the last few months. He says, "A small or moderate amount of alcohol is useful in all cases where the action of the heart is weak. This may occur either in the later years of life, or during convalescence from some acute illness, as well as during the course of acute disease when there are signs of heart-failure. The stimulant will, in these circumstances, help to sustain life, and so tide over a time of danger; and it is, besides, useful in so far as it increases appetite and aids the digestion of food. Alcohol without food is decidedly dangerous, and life cannot be continued for any length of time upon it alone."

Eight pages are devoted to the consideration of prepared and predigested foods. This closes the volume, so far as its text is concerned, but in an appendix, under the head of "Sick-Room Cookery," a number of valuable recipes are given for the preparation of simple and easily-digested foods for the sick. A fairly good index completes the work.

COLLECTED CONTRIBUTIONS ON DIGESTION AND DIET. By Sir William Roberts, M.D., F.R.S.
Philadelphia: Lea Brothers & Co., 1891.

The author tells us in his preface that this volume is mainly a reprint of a series of lectures delivered by him before the College of Physicians in 1880 and before Owen's College in 1885, to which he has added a number of papers, which have been contributed to the *Practitioner* or the *Proceedings of the Royal Society*. The book, therefore, cannot be considered as a new contribution on the part of Sir William Roberts to the literature of digestion and diet, and we think that the work is hardly to be considered equal to the one upon "Indigestion," or that upon "Foods and Dietaries," which are reviewed in this number of the GAZETTE. This is chiefly because Sir William dips into the uninteresting and comparatively unimportant processes which go on under the influence of the various proteolytic substances. It is of little value to the physician to read of "trypsimetry" or the "metacaseine reaction," and unless one wishes to make a careful ex-

perimental study of the condition of the stomach of the patient, the chapter on the amylolytic and proteolytic activity of pancreatic extracts will not prove very useful. In section five the article upon the "Acid Dyspepsia of Healthy Persons" is decidedly interesting, but we cannot help thinking that it hardly represents the knowledge which the researches within the last two years have given us concerning the stomach and its contents. An interesting point, which the author mentions, is that "by the use of lozenges, and especially of gum lozenges, I have obtained in the treatment of acid dyspepsia, distinctly more curative results than by the use of alkalies. The advent of the bland, gummy solution in the stomach probably acts topically as a soothing application to the irritated mucous membrane, allays its abnormal sensitiveness, and thereby disposes it to a more normal performance of its functions in dealing with the succeeding meal. A dose of alkali must be administered; but the milder means here suggested will give adequate relief in many instances, and will greatly promote the abbreviation of the bad periods."

SAUNDERS'S POCKET MEDICAL FORMULARY, WITH AN APPENDIX. By William W. Powell, M.D.
Philadelphia: W. B. Saunders, 1891.

The value of formularies giving prescriptions which are favorites with prominent practitioners has been much doubted by those who have the best interests of the profession—as a scientific body—at heart, chiefly because they have failed to recognize, in many instances, that the desire for these formulæ does not lie in the wish to obtain information concerning the best remedy in a given disease as much as it consists in the wish to combine successfully both from a pharmaceutical and medical point of view various remedies which individually are known by the practitioner to be indicated by certain disease processes or symptoms. This is particularly the case with young physicians, whose experience in the actual application of drugs is generally very limited, and who often wish to prescribe certain medicaments without being able to do so, owing to lack of training before graduation in the methods of prescription-writing. Dr. Powell's book has to recommend it that his prescriptions have, as a rule, been taken from the writings or practice of physicians whose experience qualifies them to be worthy of trial. Necessarily there are some combinations which certain of the readers of the THERAPEUTIC GAZETTE would never think of employing, but which, nevertheless, have names attached to them which strongly endorse their usefulness. In a number of instances preparations are called for, in the prescriptions, which are not official in the United States Pharmacopœia, but are so in the French Codex. Notwithstanding these facts, we can heartily recommend this work to all who desire to purchase such a book, trusting that it will be employed by the purchaser with the object of administering pleasant or effective remedies, and that no one will be so careless as to apply to it for the best treatment of a given disease. Under these latter circumstances it can only prove itself to be a useless and harmful addition to medical literature, as it has been impossible for its compiler, in the space at his command, to designate the exact variety or degree of disease process which indicates the employment of all the various prescriptions.

A very full and complete dose-table and a number of formulæ for hypodermic medication are placed at the back of the book. A rather unusual addition to such a publication is the series of diagrams representing the diameters of the female pelvis and fœtal head. The book is closed by a useful list of the drugs and materials used in antiseptic surgery, which is credited to Dr. Martin's little book upon "Minor Surgery and Bandaging."

THE GREATER DISEASES OF THE LIVER—JAUNDICE GALL-STONES, ENLARGEMENTS, TUMORS, AND CANCER—AND THEIR TREATMENT. By J. Compton Burnett, M.D.
Philadelphia: Hahnemann Publishing House, 1891.

We know at last what diseases are comprised under the title of "The Greater Diseases of the Liver," and all knowledge comes to use at some time or other. We find how even homœopathy may err, as on page 33: "But [the patient] would not get quite well. Oh, how often are we in this unsatisfactory state!" This sounds honest. We confess also that, until we read this book, we did not really know what "Rademacherian organ-testing" was, but ignorantly supposed it had something to do with wind instruments. Here also we meet with the case of the "New York merchant who suffered from liver." But why he ate it when it disagreed with him is to us incomprehensible. However, he was cured by carduus, and was troubled by "liver" no more. One "important lady" took a look at the author "from a position where she herself was invisible" to

him, and, he adds, "did not like the look of me." In this case chelidonium majus did wonders at last, and she presented him with a "piece of plate,"—"American tin," perhaps. But in the chapter on "Curing the Incurable." the author rises to his full height, and stands before us in solitary grandeur. Cholesterium in the third decimal trituration will cure cancer. In proof of this, the author gives us a number of cases of what might well have been distended gall-bladder, and in the true martyr spirit, while narrating the doubts of his patients as to the really serious nature of their complaints, and their scoffing and abuse, he says, "Still, I thank God and take comfort; they know not what they do." As he leaves this remark without quotation marks, we are led to infer that it is original. As a specimen of unconscious Hibernicism, we give the following: "If homœopathy is to go on advancing, we must face the question of getting behind the symptoms." Probably very few of our readers understand as they should the difference between a "symptom-cure" and an "art-cure," or know that "Paracelsus was an organopath," or understand "sarcognomy." "Amekeanism," too, is another unfamiliar word. There are pictures in this book also. Pictures of gall-stones from the size of a pea to that of a filbert. These pictures make us feel more sure about the cases of gall-stones which the author cured, and that is the reason he put them in the book. Perhaps they are not pictures of actual gall-stones seen by him, but as pictures they enforce and greatly strengthen the text. In short, we have learned so many things from reading this book, that we hope we are not included in the author's crushing sentence,—

"Fools always do sneer at what they do not understand." E. W. W.

STERILITY IN WOMEN, INCLUDING ITS CAUSATION AND TREATMENT. By Arthur W. Edis, M.D., London, F.R.C.P. With thirty-three illustrations. Philadelphia: P. Blakiston, Son & Co., 1890.

"*Il est des morts qu'il faut qu'on tue*" ("there are some dead things which it is necessary to kill over again"), quotes Mr. Lilly in his great work on "Right and Wrong," and we sincerely regret to discover, on taking up this book of Dr. A. W. Edis's on "Sterility in Women, including its Causation and Treatment," that we have to deal with a perfect graveyard of rehabilitated spectres. Were the date on the title-page 1860 instead of 1890 we would have no criticisms to offer.

The fact cannot be too much emphasized that the treatment of sterility in women should begin in a large number of cases with the male, and this must never be forgotten in a single instance.

The metrotome is a useless and a dangerous weapon, belonging exclusively to the gynæcology of a past generation; it ought never to be figured in any modern text-book, except as a curiosity.

In the use of sponge tents the antiseptic precautions are better expended on the tent in its preparation than on the uterine canal after its removal, the irrigation of an infected surface, particularly when it contains crypts, with an antiseptic solution, is useless.

The cure of anteflexion by intrauterine stems is ancestral pathology and treatment.

Cellulitis and parametritis are among the gynæcological varieties, and are not to be mentioned parallel with salpingitis.

Cutter's stem pessaries are to-day found in the lumber-rooms of hospitals, and back in the dusty corners of old closets more frequently than in the hands of competent gynæcologists.

What more shall we say? "*Verbum sapienti satis est.*"

We know that Dr. Edis is a skilful, good worker, but why did he not give us a better book on so important a subject?

The views held on the subject of sterility are a fair index of the progress in gynæcological pathology, for it touches almost all diseases of the reproductive organs. We are unwilling to believe that this work represents the status of this subject in Great Britain.

H. A. K.

MANUAL OF CHILDBED NURSING. By Charles Jewett, A.M., M.D., etc., Professor of Obstetrics and Diseases of Children at Long Island College Hospital. New York: E. R. Pelton, 25 Bond Street, 1891.

This is a very condensed manual, no unnecessary word being admitted. It is, however, very sound, and the very absence of unnecessary detail allows the facts to stand out more prominently. The author teaches thorough antisepsis, perhaps too thorough, for the private obstetric case. The book contains a model nurse's daily record, and being short and concise, and, we suppose, furnished at a reasonable price, we consider it a very good book to put in the nurse's hands.

E. W. W.